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A Targeted Discharge Planning for High-Risk Readmissions

Focus on Patients and Caregivers

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ABSTRACT

Purpose of Study: Racial and ethnic minorities with socioeconomic disadvantages are vulnerable to 30-day hospital readmissions. A 16-week quality improvement (QI) project aimed to decrease readmissions of the vulnerable patient populations through tailored discharge planning. The project evaluated the effectiveness of using a 25-item checklist to increase patients' and caregivers' health knowledge, skills, and willingness for self-care and decrease readmissions.

Primary Practice Setting: The project took place in an inner-city teaching hospital in the Mid-Atlantic region.

Methodology and Participants: A casual comparative design compared readmissions of the before-intervention group (May 1–July 31, 2021) and the after-intervention group (August 1–October 31, 2021). A pre- and postintervention design evaluated the effectiveness of a 25-item checklist by analyzing the differences of Patient Activation Measure (PAM) pre- and postintervention survey scores and levels in the after-intervention group. Participants were General Medicine Unit patients 18 years or older who had Medicare Fee-for-Service, resided in 10 zip codes near the hospital, and were discharged home.

Results: Of 30 patients who received the intervention, one patient was readmitted compared with 11 readmissions from 58 patients who did not receive the intervention. The readmission rate was decreased from 19% to 4% during the 16-week project: 11 (19%) versus 1 (4%), $p = .038$. After receiving the intervention, patients' PAM scores were increased by 8.55, $t(22) = 2.67$, $p < .014$. Three patients had a lower postintervention survey level, whereas 12 patients obtained a higher postintervention survey level ($p = .01$). The increase in scores and levels supported that the intervention effectively improved patients' self-management knowledge, skill, and willingness for self-care.

Implications for Case Management Practice: The QI project showed that the hospital could partner with patients at high risk for readmission and their caregivers. Accurate evaluation of patients' health knowledge, skills, and willingness for self-care was essential for sufficient discharge planning. Tailored use of the checklist improved patients' self-activation and functionally facilitated patients' and caregivers' care needs and capabilities. The checklist was statistically and clinically effective in decreasing 30-day hospital readmissions of vulnerable patient populations.

Key words: *discharge planning, patient engagement, readmission, self-management*

"Hospital readmission" is an unplanned visit of patients to the same hospital within 30 days of the index discharge (Centers for Medicare & Medicaid Services, 2012). Hospital readmissions diminish patients' quality of life, burden caregivers with extended care needs, deepen health equity barriers, and increase U.S. health care costs (Khau et al., 2020; Lewsey & Breathett, 2021; Singotani et al., 2019). Patients who are racial and ethnic minorities and have socioeconomic disparities experience increased vulnerability for hospital readmissions (Figueroa et al., 2018; Hu et al., 2014; Kaplan et al., 2019; Lewsey & Breathett, 2021). In 2017, preventable adult hospitalization cost was $33 billion, 77% of which, or $27 billion, was driven by chronic conditions (McDermott & Jiang, 2020). Racial and ethnic minorities have a much higher prevalence of chronic comorbidities such as cardiovascular-related diseases and diabetes than Whites (Centers for Disease Control and Prevention, 2017; Davis et al., 2017). Although income level is somewhat correlated to medication compliance rates, racial and ethnic minorities had a lower medication adherence rate than Whites when socioeconomic

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During the discharge process, patient engagement involves communicating with patients and designated caregivers to understand their perception of health and capabilities in managing health…. Although low socioeconomic status is notably associated with difficulty accessing health care (Pennsylvania Department of Health, 2019), high poverty and low household income induce less home support, lack of transportation, and diminished compliance with health maintenance requirements.

status was adjusted (Gu et al., 2017; Xie et al., 2019). Low income and low education impact lower adherence to medications for diabetes, hypertension, and hyperlipidemia compared with affluent populations, leading to worsening readmissions (Calvillo-King et al., 2012; Xie et al., 2019). The likelihood of racial and ethnic minorities with socioeconomic disadvantages to increased vulnerability to readmissions and few existing discharge interventions to address the need for vulnerable patients (Dalal et al., 2021; Rodriguez et al., 2017) calls for a tailored discharge planning to prevent readmissions and narrow the health disparities gap (Khau et al., 2020; Lloren et al., 2019). Evidence-based research supports the patient engagement process and the utilization of discharge planning tools, helping high-risk patients to readmissions learn self-management knowledge, skills, and willingness to care for themselves (Brunner-La Rocca et al., 2020; Fritz et al., 2020; Hoyer et al., 2018; Kearns et al., 2020; Rodriguez et al., 2017).

Background

Academic metro hospitals are susceptible to excessive readmission rates by having a disproportionately large portion of patient populations whose socioeconomic disadvantages make them prone to increased readmission risks (Caracciolo et al., 2017). Intervention efforts, such as hospital discharge planning implementing person-centered care, reduce readmission rates (Berntsen et al., 2019). Discharge efforts to provide patients with what they need after hospitalization are necessary, but if every patient cannot receive discharge services, hospitals need to have a systematic procedure to screen high-risk patient populations for readmissions for effective discharge planning (Fritz et al., 2020; Hoyer et al., 2018; Khau et al., 2020). During the discharge process, patient engagement involves communicating with patients and designated caregivers to understand their perception of health and capabilities in managing health (Ahmad et al., 2014). However, Pennsylvania fell 76% below the national benchmark for giving patients and their caregivers preferences during the hospital discharge process, 45% below in communicating about medications and less than 29% in the communication of discharge information (National Healthcare Quality and Disparities Reports, 2019). Although low socioeconomic status is notably associated with difficulty accessing health care (Pennsylvania Department of Health, 2019), high poverty and low household income induce less home support, lack of transportation, and diminished compliance with health maintenance requirements (Hu et al., 2014).

The inner-city teaching hospital in Mid-Atlantic region received 75% of patients from 16 zip codes surrounding the hospital (Public Health Management Corporation, 2016). Within that category, five zip codes had a 43%–89% Black population ratio and 30%–44% of their residents lived below the poverty level (Census Reporter, n.d.-a, n.d.-b, n.d.-c, n.d.-d, n.d.-e). A Mid-Atlantic Catholic hospital, closed in 2020 to be under the operation of Mid-Atlantic teaching hospital since 2021, had most patients come from three zip codes (Trinity Health Mid-Atlantic, 2019), with high poverty levels and 80% of Black populations.

The Mid-Atlantic teaching hospital had a hospital-wide unplanned readmission rate of 15.9%, whereas the national score was 15.5% from 2018 to 2019 (Medicare.gov, n.d.). Among the hospital's patients, one third of adults (32%) were diagnosed with hypertension and one in 10 of those 32% reported not taking all the medications prescribed (Public Health Management Corporation, 2016). Barriers to providing differentiated care for the vulnerable increase readmission rates and worsen health inequality (Lloren et al., 2019).

Aims

Aim 1: To determine the impact of the 16-week checklist intervention on the outcome of readmissions of all patients discharged to home from the before- and after-intervention groups.

Aim2: To determine the effectiveness of the 16-week checklist intervention, used by discharge planners during the patient engagement process, on increasing patients' and caregivers' health knowledge, skills, and willingness for self-care, measured by differences between the pre- and post-Patient Activation Measure (PAM) survey scores and levels.

Methods

Project Design

The quality improvement (QI) project used a casual comparative design and pre- and postintervention study design. The former method compared readmissions of a before-intervention group with that of the after-intervention group. The latter evaluated the effectiveness of a 25-item checklist intervention tool (see Appendix A) by examining the differences between the pre- and postintervention survey scores and levels collected from the after-intervention group. The data collection period was May 1–July 31, 2021, for the before-intervention group and August 1–October 31, 2021, for the after-intervention group. Because the project aimed to measure 30-day readmissions, readmission data collection was extended to August 31, 2021, for the before-intervention group and November 30, 2021, for the after-intervention group. The before-intervention group did not receive an intervention. After-intervention group participants filled out a 10-question PAM survey (PAM-10) before receiving an intervention and completed a post-PAM survey a month after their home discharge. The organization's institutional review board approved the project's implementation.

Settings and Participants

The project took place in an inner-city teaching hospital in the Mid-Atlantic region. Participants' inclusion criteria were General Medicine Unit patients 18 years or older who had Medicare Fee-for-Service, resided in 10 zip codes near the hospital, and were discharged home. The project excluded General Medicine Unit patients admitted with diagnoses of confusion, substance and alcohol withdrawals, sickle cell diseases, palliative or hospice care, and homelessness and who were discharged to a facility or home with geriatric or chronic obstructive pulmonary disease programs offered by the hospital.

The project had four discharge planners, one of whom was the project leader, and the other was a manager in the case management department. The project leader provided team members with evidence-based publications to familiarize the concept of patient engagement and patient activation. From April to July 2021, personal and group video meetings and email exchanges facilitated the team's learning about survey contents, intervention tools, and implementation processes.

Instrument

On the basis of the inclusion criteria, the hospital's electronic medical record (EMR) system screened the before- and after-intervention participants.

The intervention was a 25-item checklist (see Appendix A). The intervention tool was a modification of the Re-Engineered Discharge (RED) toolkit (Department of Health and Human Services, Agency for Healthcare Research and Quality, 2013) and an adaptation of discharge planning Section 482.43 by the Centers for Medicare & Medicaid Services (2015). The items evaluated patients' care capacities concerning medication adherence, having caregivers at home, visiting physicians, recognizing anticipated problems, and an ability to eat and exercise. Adams et al. (2014) validated the RED toolkit as effective in reducing readmissions. The National Quality Forum and the Institute for Healthcare Improvement evaluated the RED toolkit as adequate for safe discharge planning practice (Roberts et al., 2018).

After-intervention group participants were surveyed before and after the intervention using the PAM-10 (see Appendix B). The purpose of the PAM-10 questionnaire is to evaluate the degree of patients' health knowledge, enabling them to manage their daily lives with chronic disease actively and their confidence in controlling their health management behaviors on an ongoing basis (Hibbard et al., 2007). The preintervention survey evaluated participants' health care knowledge and skills related to medication adherence, collaborating with physicians, discharge care needs understanding, as well as looking into their willingness to care for themselves even in stressful and unexpected situations (Hibbard et al., 2004). A license was acquired to use the PAM-10 questionnaire and an online software tool that calculated patients' survey answers into scores and levels. The survey had scores ranging from 0 to 100, with 100 being the highest, and four levels on Likert scales, with one the lowest and four the most activated for self-care management (Ahmad et al., 2014). Patients who were not ready to assume their self-care role received Level 1. Level 2 patients recognized self-care as necessary but lacked knowledge and could not manage their health. Level 3 patients had knowledge and skills but did not have the confidence to continue practicing self-care. Level 4 patients had knowledge, skills, and confidence to react promptly even when encountering unanticipated events (Ahmad et al., 2014). The PAM questionnaire had internal consistency with Cronbach's α of 0.81 and content validity, which indicated that patients with low PAM scores had unplanned admissions (Prey et al., 2016).

Intervention

A data analyst programmed the hospital's EMR to extract admission and readmission records from May 1, 2021, to December 2021, a 2-month extension from the last admission date of patients in the

after-intervention group. EMR data extraction was open until December 2021, predicting that the last after-intervention group patient admitted on October 31, 2021, could be discharged home during November and readmitted 30 days after the discharge. The project leader had access to the programmed data set to categorize patients as inclusions or exclusions and collect demographic and readmission information twice a week for the before-intervention group and daily for the after-intervention group. Before enrolling patients in the intervention process composed of the preintervention survey, intervention implementation, and postintervention survey, the project leader performed a chart review first for each patient to avoid enrolling patients who would go to facilities. Discharge planners met with patients and their caregivers involved in patient care at home. If the caregivers were appointed as emergency contacts rather than actual caregivers at home, they were not included in the patient engagement process. Discharge planners presented a paper PAM-10 survey form to patients and caregivers in a hospital. Upon checking the survey answers, discharge planners reviewed the 25-item checklist with patients and caregivers and provided education and care coordination efforts. Thirty days after patients' home discharge, the project leader contacted them by phone for the postintervention survey using the PAM-10 survey questionnaire.

Data Analysis

Data analysis was performed using IBM SPSS Version 27. Descriptive statistics analyzed categorical sociodemographic characteristics in counts and frequencies for both groups. Descriptive statistics examined differences in the two groups' continuous demographic factors in mean, median, and interquartile range. A Mann–Whitney *U* test was used to determine whether the two independent groups' continuous variable characteristics were similar or different. Fisher's exact test was used to analyze possible readmission decrease in the after-intervention group. A paired *t* test evaluated the effectiveness of the intervention by analyzing the differences of pre- and postintervention survey scores. Pre- and postintervention levels were ordinal variables. Thus, the nonparametric Wilcoxon signed-rank test analyzed the survey levels. The project hospital's OneDrive stored original files containing participants' sensitive information, and the project leader had exclusive access to the data via VPN and password. The original file will remain in the project hospital's OneDrive for a year after completing the project. Paper PAM-10 survey forms included each patient's name and identification number. Completed survey forms are kept in a locked cabinet file in the office of the project's hospital.

Results

Narrative Description of Sample

As shown in Table 1, the before-intervention group had 112 admissions during May 1–July 31, 2021, and the after-intervention group had 91 admissions from August 1 to October 30, 2021. The number of home discharges was 58 (51.5%) from the before-intervention group and 39 (42.9%) from the after-intervention group.

The before- and after-intervention groups had similar categorical demographic characteristics (see Table 2). The General Medicine Unit predominantly served Black patients (>76%), females (>56%), and unmarried (>75%). The mean ages of participants were 67 and 66 years for the before-intervention group and

TABLE 1
Discharge Dispositions and Readmissions: Before- and After-Intervention Groups

	Before-Intervention (*n* = 112)		After-Intervention (*n* = 91)	
Group	**Discharge Disposition, *n* (%)**	**Readmission, *n***	**Discharge Disposition, *n* (%)**	**Readmission, *n***
Home (self-care)				
Received intervention	0	0	8 (8.8)	1
Not received intervention	23 (20.2)	3	3 (3.2)	2
Home (HHC)				
Received intervention	0	0	22 (24.2)	0
Not received intervention	35 (31.1)	8	6 (6.6)	1
Facilities	29 (26.0)	3	24 (26.3)	2
Excluded	24 (21.5)	10	28 (30.8)	8
Deceased	1 (0.1)	0	0 (0)	0
Total	112 (100)	24	91 (100)	14

Note. HHC = home health care.

TABLE 2
Demographic Characteristics: Before- and After-Intervention Group Categorical Outcomes

	Before-Intervention Group Home Discharges (*n* = 58)	After-Intervention Group Home Discharges (*n* = 39)
Data collection	May 1–Aug 31, 2021	Aug 1–Nov 30, 2021
Age, mean (*SD*)	67 (15.38)	66 (15.42)
	***n* (%)**	***n* (%)**
No. of home discharges		
Self-care	23 (39.7)	11 (28.2)
Home health care	35 (60.3)	28 (71.8)
Age in years		
<65	21 (36.2)	15 (38.5)
≥65	37 (63.8)	24 (61.5)
Race/Ethnicity		
Black	44 (75.9)	33 (84.6)
White	9 (15.5)	2 (5.1)
Other	5 (8.6)	4 (10.3)
Gender		
Male	21 (36.2)	17 (43.6)
Female	37 (63.8)	22 (56.4)
Marital status		
Married	9 (15.5)	10 (25.6)
Not married	49 (84.5)	29 (74.4)
Zip codes		
1	25 (43.1)	12 (30.8)
2	9 (15.5)	8 (20.5)
3	8 (13.8)	5 (12.8)
4	8 (13.8)	5 (12.8)
5	3 (5.2)	3 (7.7)
6	2 (3.4)	3 (7.7)
7	2 (3.4)	1 (2.6)
8	1 (1.7)	1 (2.6)
9	0 (0)	1 (2.6)
10	0 (0)	0 (0)
Primary care provider		
Yes	54 (93.1)	39 (100)
No	4 (6.9)	0 (0)
Discharge diagnoses		
HTN/HF	5 (8.7)	5 (12.9)
COPD	5 (8.6)	5 (12.8)
PNA/Sepsis	7 (12.0)	4 (10.2)
Others	41 (70.7)	25 (64.1)

Note. COPD = chronic obstructive pulmonary disease; HF = heart failure; HTN = hypertension; PNA = pneumonia.

the after-intervention group, respectively. Nearly 85% of patients in both groups came from five zip codes. As illustrated in Table 3, the before- and after-intervention groups had identical median number chronic diseases (5, 5) and similar LACE+Readmission scores (75, 76), although the two means for the hospital length of stay in days had some gap (4.5, 7). The Mann–Whitney *U* test was used to compare outcome differences of the number of chronic diseases, LACE+Readmission scores, and length of stay days. The significance values for chronic diseases ($p = .311$), LACE+Readmission scores ($p = .184$), and length of stay ($p = .077$) assumed that each group participants' health severity or conditions were somewhat similar.

TABLE 3
Continuous Outcome Variable Characteristics: Before- and After-Intervention Groups

Outcome Variable	Chronic Diseases, *n*		LACE+Readmission[a] Scores		Hospital Length of Stay, days	
	Before-Intervention	After-Intervention	Before-Intervention	After-Intervention	Before-Intervention	After-Intervention
n (%)	58 (100)	39 (100)	58 (100)	39 (100)	58 (100)	39 (100)
Mean	4.64	5	72.84	75.05	6.14	8.38
95% CI	[4.16, 5.12]	[4.39, 5.61]	[70.87, 74.82]	[72.56, 77.54]	[5.08, 7.20]	[6.29, 10.47]
Median	5	5	75	76	4.5	7
SD	1.823	1.892	7.502	7.691	4.037	6.447
Min	2	2	53	50	2	2
Max	11	10	84	89	18	30
Range	9	8	31	39	16	28
IQR	3	2	11	5	5	8
Skewness	[0.92, 0.32]	[0.49, 0.38]	[−0.73, 0.32]	[−1.46, 0.38]	[1.22, 0.32]	[1.63, 0.38]
Kurtosis	[1.65, 0.62]	[0.19, 0.74]	[−0.33, 0.62]	[3.35, 0.74]	[0.55, 0.62]	[2.68, 0.74]

[a]The project's hospital electronic medical record system calculates LACE+Readmission scores by summing points based on patient's gender, urgent admission, discharge institution, length of stay, alternative level of care status, emergency department visits in previous 6 months, elective admission in previous year, and Charlson scores.

Findings for Aim 1

The before-intervention group had 11 readmissions (19%) out of 58 home discharges, whereas one patient (4%) from the 30 enrolled was readmitted (see Table 4 and Figure 1). The after-intervention group had 39 patients discharged to home. Nine patients in the after-intervention group were not enrolled because they refused to take part in the survey, had sudden discharge changes from a facility to home, or were nonverbal or illiterate, leaving 30 patients enrolled for the intervention. Of the nine patients unenrolled for the implementation, three returned to the hospital within a month. Fisher's exact test was utilized to analyze whether the after-intervention group would be less likely to have readmissions. Fisher's exact test with a p value of .038 revealed that the after-intervention group had statistically significant lower readmissions than the before-intervention group, supporting the rationale that the intervention provided to the home discharge patients in the after-intervention group effectively prevented readmissions.

Findings for Aim 2

Thirty patients in the after-intervention group completed a preintervention survey in person and received an intervention. Of the 30 patients, 23 completed a postintervention survey by phone 30 days after their discharge, leaving seven missing data for postintervention survey outcomes. Survey answers were summed in scores ranging from 0 to 100 and displaced on levels on a Likert scale.

The means of preintervention survey scores were 60.83 (n = 30) and 59.43 (n = 23), and the postintervention survey score mean was 67.97 (n = 23), with skewness (−0.04, 0.49) and kurtosis (−0.91, 0.94). Correlation (r) was .574 with a p value of .004. A paired t test was conducted to evaluate the effectiveness of the intervention by analyzing differences between the pre- and postintervention survey scores. The mean difference was 8.55 (n = 23) with a standard deviation of 15.39 (95% CI [1.89, 15.2]) (see Figure 2). The outcome of the paired t test supported that there was a statistically significant difference between the pre- and postintervention survey scores as evidenced by $t(22) = 2.67$, $p < .014$. Cohen's d of 0.56 indicated a moderate effect size (Brydges, 2019). The Wilcoxon signed-rank test analyzed the pre- and postintervention survey levels. It showed that three patients had a lower survey level after the intervention, and 12 patients obtained a higher survey level after the intervention. The difference between the preintervention level mean was 5.5, and the postintervention level mean was 8.63, with a p value of .01.

TABLE 4
Readmission Comparison: Before- and After-Intervention Group Home Discharge

	Readmit, *n* (%)	No Readmit, *n* (%)	Total
Before-intervention group	11 (19)	47 (81)	58 (100)
After-intervention group	1 (4)	29 (96)	30 (100)

The project's patient engagement process assisted discharge planners in discovering the needs and abilities of high-risk readmission patients to care for themselves as well as caregivers' availability, a crucial component in bridging patient care needs and capacities at home.

The paired *t* test and Wilcoxon signed-rank test results supported that the intervention significantly increased patients' and caregivers' knowledge, skills, and confidence in their health management.

Discussion

The project's patient engagement process assisted discharge planners in discovering the needs and abilities of high-risk readmission patients to care for themselves as well as caregivers' availability, a crucial component in bridging patient care needs and capacities at home. Backman et al. (2017) supported the importance of in-depth understanding of patients' and caregivers' overall situations and learning how they manage diseases at home to avoid fragmented care and to decrease readmission possibilities. Face-to-face meetings with patients and caregivers made individual evaluation and provision of tailored education and discharge coordination much more effective. PAM survey responses accurately reflected patients' and caregivers' situations. The accurate evaluation was crucial for discharge planners to determine what items from the 25-point checklist they had to focus on to effectively augment patients' and caregivers' health knowledge and skills and provide care coordination appropriate to each patient. The survey becoming the basis for appraising patients' and caregivers' care-related situations was paralleled in what Mitchell et al. (2013) and Kearns et al. (2020) recognized for the usefulness of the PAM survey questionnaire.

The checklist asked patients and their caregivers how much they knew about their diseases and symptoms and how they manage medications as prescribed. If the checklist indicated patients' needs unmet or insufficient caregivers' support concerning eating and daily activities, discharge planners supported them with care coordination. Shippee et al. (2012), Leppin et al. (2014), and Gao et al. (2018) spoke for preventing imbalanced health care needs and capacity, as the imbalance exacerbates the illness and care burden in a repetitive pattern. The evidence-based research findings that frame the checklist effectively identify readmission attributes and offer discharge planning expertise to balance patients' needs and care capabilities.

Discharge planners spent approximately half an hour or more during the patient engagement process, gathering PAM survey answers and implementing the checklist. Initially, the project did not plan to help patients and caregivers answer the survey questionnaires. However, discharge planners learned from the first several enrollments that patients and families or caregivers did not fully understand some of the questions and needed explanations to answer the survey correctly. Hence, the project adapted to have discharge planners stand by while patients and caregivers completed their preintervention survey. Although it took extra time for discharge planners to enroll patients, helping patients with the survey led to a more accurate evaluation and proper checklist use.

The intervention increased patients' health knowledge, skills, and willingness in relation to self-care management and their ability to react to unanticipated events at home. Given the correlation of lower PAM scores and ineffective discharge planning to a

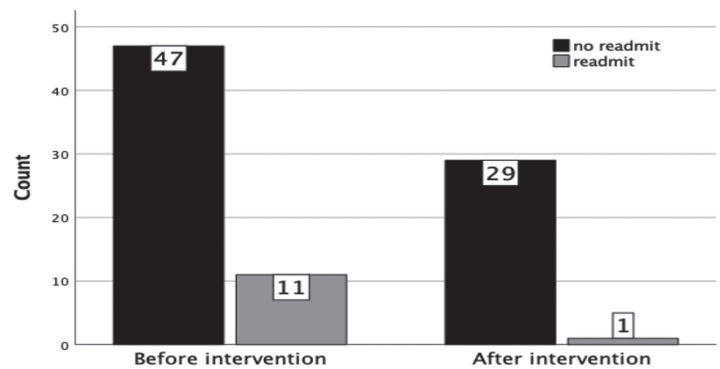

FIGURE 1
Readmission comparison: Before- and after-intervention groups.

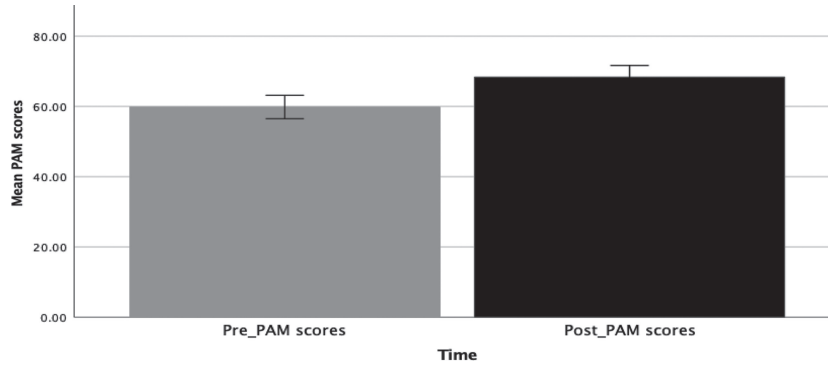

FIGURE 2
Comparison: Mean pre- and post-PAM survey scores. PAM = Patient Activation Measure.

higher readmission incidence as specified by Ahmad et al. (2014), Mitchell et al. (2013), and Henke et al. (2016), the project succeeded in achieving its aim to decrease readmissions with increased mean PAM scores postintervention.

The extended time required for the tool implementation was a recurring issue throughout the project implementation. Yet, with extensive communication during the survey and checklist use, patients and caregivers sufficiently learned how well or poorly they had managed their health before admission and left the hospital knowing better ways to handle their chronic diseases and gained increased confidence for self-care. Rodriguez et al. (2017) and Dalal et al. (2021) raised the concern of the health industry coming up with a few practical strategies to provide patient-centered discharge planning, a highly effective method to decrease readmissions.

The intervention implementation process showed that hospitals could partner with high-risk readmission patients who lack health knowledge and have low adherence to treatment by offering a quality patient engagement process. Dalal et al. (2021) implemented electronic self-assessment tools by which patients and caregivers self-evaluated their health needs. After the patient's self-evaluation, clinicians were involved a day or two before discharge in reinforcing the patient's discharge preparedness. The electronic tool was neither effective in increasing patients' PAMs nor effective in decreasing hospital length of stay. Gordon and Hornbrook (2018) discovered that expecting older and Black patients to use electronic devices for self-care evaluation and education would be premature due to learning styles and belief systems. In their study of more than 60% of older adult participants with an education level of 6 years or less, Chan et al. (2021) reported person-centered care as a significant indicator of improved patient activation level.

Implementation of the intervention in the project started the patient engagement process at the beginning of hospitalization to have enough time to learn about patients. The time discharge planners invested in the patient engagement process contributed to drawing an accurate understanding of patients' and caregivers' health and social situations, leading to proper education and care coordination tailored to their needs and care capacities. The intervention's impact on increasing PAM levels postintervention and reducing readmissions will potentially narrow the health equity gap.

Limitations

A small sample size inhibited the intervention in predicting readmission factors from outcome characteristics. For example, in the before-intervention group, three readmissions occurred out of 23 self-care discharges and eight readmissions out of 35 patients who received home care services. The after-intervention group had one readmission out of 28 patients discharged home with home care services in contrast to three readmissions out of 11 patients who chose to go home without receiving home care services. Two scenarios may be postulated to explain these results: The implementation process could have increased discharges with home care services, and home care

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services could take part in preventing readmissions. Yet, the result could yield a skewed interpretation considering the small sample size.

Patients' and caregivers' interpretation of some of the PAM questions was not consistent in that the study entailed discharge planners reviewing the survey responses. More than 75% of screened participants in the project were Black patients from low-income households; however, the project's discharge planners comprised three Whites and one Asian, none of whom received competency training in understanding patients with diverse racial and socioeconomic backgrounds. The intervention process did not analyze patients' and caregivers' responses to the checklist, which could offer further insights into understanding patients' knowledge and attitudes toward self-management of their health.

Strength

Patients and caregivers appreciated the in-depth conversation during the patient engagement process. The implementation tool fulfilled its purpose of evaluating and enhancing patients' self-efficacy. Moreover, the discharge planning process offered momentum to patients and caregivers to think about their health goals and plans and discover how practical their health management approach has been. Receiving attention at a difficult time gave patients and caregivers a sense of comfort, influencing positive patient experience in the hospital and level of patient satisfaction.

Successful readmission prevention reduces emergency department (ED) visit volumes that could save health care costs. Proactive patient engagement captures detailed information of patients and their caregivers. The information shared among multidisciplinary team members reduces the time the team members must get to know patients in each patient's visit to the hospital.

Implications for Case Management

The QI project showed that the hospital could partner with possible high-risk readmission patients and their caregivers through a systematic effort valuing patient engagement. Without the trust shown by patients and caregivers in revealing their situations to discharge planners, an accurate evaluation of patients' knowledge, skills, and willingness for self-care was unlikely to be sufficient for discharge planning to prevent readmissions (Schjodt et al., 2021). Tailored use of the checklist improved patients' self-activation and functionally balanced patients' care needs and capabilities. Yet, the experiences, evidence-based knowledge, and enthusiasm of discharge planners translated the tailored checklist into everyday activities patients and caregivers could follow (Liang et al., 2018), resulting in the intervention being effective statistically and clinically in decreasing 30-day hospital readmissions of vulnerable patient populations. The tailored intervention raised mean PAM levels from 5.5 before intervention to 8.7 with a p value of .01 after the intervention. Hibbard et al. (2007) noticed that high PAM levels influenced other positive health behavior changes. Greene et al. (2015) and Barker et al. (2018) consistently supported high PAM levels as an indication of better controlled blood pressure and blood lipid levels, a factor preventing ED visits and hospitalization (Barker et al., 2018; Greene et al., 2015). The findings support that improving self-management knowledge and skills and the care capacity of patients and caregivers will impact managing chronic conditions at home.

Conclusion

Social inequity associated with increased disease burden and resource availability increases the possibility of readmissions (Khau et al., 2020; Lewsey & Breathett, 2021). Because the project's hospital serves

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a large proportion of racial and ethnic minorities who experience social disadvantages, a targeted discharge planning process offered an intervention to patients vulnerable to readmissions. The project's intervention resulted in statistical and clinical significant improvement in patients' health knowledge, skills, and willingness for self-care postdischarge consecutively correlated with decreased readmissions.

Sustainability

Every patient's discharge planning assessment within 1–2 days of admission is a standard discharge practice (Centers for Medicare & Medicaid Services, 2015). Unit discharge planners' initial assessment verifying demographics and care needs in current practice will add value as a personalized screening tool in addition to patients' health and socioeconomic information extracted from EMRs in identifying high-risk readmissions. Nevertheless, utilizing a handful of experienced discharge planners in the department for a focused interview process for patients and designated caregivers is essential for optimal understanding of patients' situations and the use of resources in the hospital.

Leadership recognition of the targeted population's needs is significant to embrace the discharge planning process change it may necessitate. According to Smeraglio et al. (2019), nurse case managers perceived that readmissions occurred because of systematic issues (48%), lack of patients adherence (20%), and no specific causes (41%). Discharge planners' efficient communication with patients and caregivers and their enthusiasm to balance patients' care needs and capacities determine discharge planning quality and patients' and caregivers' discharge readiness. Also, their proficiency and expertise cut down the interview time, which can be the primary concern should the implementation is translated into practice.

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Appendix A
25-Item Checklist

Identification:

Date of implementation:

1. The patient has a language barrier or a lack of health literacy

   Yes or no

   Note:

2. The patient and caregivers understand chronic illnesses

   Yes, No

   Note:

3. The patient and caregivers understand the symptoms leading to the hospitalization

   Yes, No

4. The patient understands why s/he takes home medications

   Yes, No

   Note:

5. The patient takes medications as prescribed or someone assists

   Yes, No

   Note:

6. The patient or caregivers can afford medications

   Yes, No

   Note:

7. The patient or caregivers pick up medications from a pharmacy

   Yes, No

   Note:

8. The patient or caregivers know how to refill medications

   Yes, No

   Note:

9. The patient and caregivers have goals to manage health better

   Yes, No

   Note:

10. The patient and caregivers can describe what anticipated care needs they will have after home discharge

    Yes, No

    Note:

11. The patient has difficulty getting food, cooking, or eating

    Yes, No

    Note:

12. The patient has difficulty walking or moving around

    Yes, No

    Note:

13. If anyone helps the patient in a timely manner when s/he needs help

    Yes, No

    Note:

(*continues*)

Appendix A
25-Item Checklist (*Continued*)

14. The patient has home support for anticipated events

    Yes, No

    Note:

15. The patient or caregivers understand the discharge plan

    Yes, No

    Note:

16. The patient or caregivers have contact numbers for HCA, medical equipment, HHA, home infusion, etc.

    Yes, No

    Note:

17. The patient or caregivers know about follow-up appointments arranged after discharge home

    Yes, No

    Note:

18. The patient or caregivers know about the place and time of the appointments

    Yes, No

    Note:

19. The patient and caregivers have difficulty getting to follow-up appointments

    Yes, No

    Note:

20. The patient or caregivers have transportation to get to their appointments

    Yes, No

    Note:

21. The patient can take care of himself or herself at home

    Yes, No

    Note:

22. The patient or caregivers need help at home

    Yes, No

    Note:

23. The patient or caregivers are willing to discuss the discharge summary with a follow-up discharge planner

    Yes, No

    Note:

24. The patient or caregivers can think of any situations that prevent the patient from getting better at home

    Yes, No

    Note:

25. The patient or caregiver know what to do when they have unexpected health problems or events impacting health

    Yes, No

    Note:

Note. HCA = home care agency; HHA = home health aide.

Appendix B
Patient Activation Measure 10 Survey Questionnaire Form

ID/Name

Date

Circle the answer that is most true for you today. If the statement does not apply, select N/A

1	When all is said and done, I am the person who is responsible for taking care of my health.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
2	Taking an active role in my own health care is the most important thing that affects my health.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
3	I know what each of my prescribed medications do.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
4	I am confident that I can tell whether I need to go to the doctor or whether I can take care of a health problem myself.	Disagree strongly	Disagree	Agree	Agree Strongly	N/A
5	I am confident that I can tell a doctor concerns I have even when he or she does not ask.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
6	I am confident that I can follow through on medical treatments I may need to do at home.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
7	I have been able to keep up with lifestyle changes, like eating right or exercising.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
8	I know how to prevent problems with my health.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
9	I am confident I can figure out solutions when new problems arise with my health.	Disagree strongly	Disagree	Agree	Agree strongly	N/A
10	I am confident that I can maintain lifestyle changes, like eating right and exercising, even during times of stress.	Disagree strongly	Disagree	Agree	Agree strongly	N/A

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