Feature Article

Transitional care and empowerment of the older adult

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ABSTRACT

Older adults with complex comorbidities are at risk for challenges that compromise their post-discharge safety at home. A growing body of evidence suggests that post-hospitalization outcomes for vulnerable elders can be improved by interventions that encourage patient empowerment. The purpose of this pilot project was to determine if an individualized transition intervention would improve patient empowerment 30 days after home discharge following an acute illness. Through individualized interaction with an advanced practice nurse, a sample of 25 elder patients was encouraged to acquire the knowledge and confidence to advocate for their needs after discharge from a subacute facility. Pre and post-intervention patient empowerment was measured through the Senior Empowerment and Advocacy in Patient Safety survey. Quantitative data from this study provided evidence to support the benefit of transition care in enhancing patient empowerment. The data generated by this project will add to the existing body of evidence on transitional care.

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Introduction

Transitions of care are weak links in the integrity of the current healthcare system, especially for geriatric patients who comprise a high percentage of hospital discharges. Older adults with complex illnesses face a high risk for adverse outcomes, as they navigate the fragmented transition from hospital to home. Since the arrival of healthcare reform, several transition models have bridged this gap through improved collaboration, patient education, and post-discharge follow-up. However, many healthcare organizations have not fully addressed the seamless integration of care across multiple settings.[1]

Several factors contribute to patients' challenges as they travel across varied settings of care and among multiple providers. The rise in the hospitalist movement has disrupted the continuity of the traditional primary care model, and poorly integrated information systems hinder inter-provider communication and diagnostic follow-up.[2] Elder patients with comorbidities and polypharmacy often lack the assertiveness to clarify information, since they are overwhelmed by fatigue, anxiety, and sensory overload. Emotional stress, limited finances, and inadequate social support may increase elder patients' feelings of isolation and bewilderment after home discharge.[3]

Fragmented transition care contributes to several adverse outcomes. Medication errors commonly occur at transition points due to delayed or uncoordinated contact with a primary provider.[4] Many of these adverse drug events could be prevented by improved surveillance and patient engagement during cross-site transfers. Disjointed transitions also impede quality care, undermine patient satisfaction and lead to further decline in health outcomes.[5] In addition, ineffective transition care contributes to hospital readmissions which have a significant economic impact on the healthcare system.[6]

The dramatic rise in home care increases the vulnerability and powerlessness of older adults after an acute illness. Care management at home becomes the responsibility of patients and caregivers who are often the only common denominators in a disconnected healthcare system. The literature on transition care highlights the merit of patients' ability to self-advocate and to actively engage in their care.[7] Another key research theme is provider consistency in a caring, coaching relationship focused on an understanding of each patient's unique needs and goals.[8] The Health Belief Model proposes that people will adopt a behavior when they believe the behavior will enhance their health.[9] Coaching a patient to recognize the benefit of self-care attributes is consistent with this model. Prior research has shown that a continuous transition care relationship empowers patients, while fostering confidence in themselves and in the health care system.[10] In general, the literature shows that enhancing empowerment can increase patients' confidence, knowledge, and capacity for goal attainment. However, there is a paucity of research on the concept of patient empowerment as it relates specifically to home discharge after an acute illness.

This pilot project entitled "**QUEST** to Safe Care at Home" evaluated the outcomes of an individualized transition intervention to enhance geriatric patients' empowerment for self-care after discharge from a subacute facility to the home environment. The project integrated

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best practices from evidence-based transition models, such as the Transitional Care Model (TCM) and Project RED (Re-Engineered Discharge). In the TCM, care was continuously coordinated by the same APN with an emphasis on patient engagement and education, inter-professional collaboration and risk management.[5] Project RED used telephone contact to follow up on test results, coordinate outpatient services, provide education, and assess understanding of medications and treatment plans.[11] Using principles from both TCM and Project RED programs, this project's model centered around an interactive personalized health journal which encouraged patients' active participation. Patients were empowered to develop self-care behaviors through a continuous coaching relationship with the same advanced practice nurse from subacute to home.

In this study, empowerment was measured through two subscales from the Senior Empowerment and Patient Safety (SEAPS) survey: (a) self-efficacy which the SEAPS survey defines as confidence in the ability to take action; and (b) outcome-efficacy which the survey defines as the belief that an action will benefit one's health.[12] According to these definitions, this study measured empowerment through assessment of patients' *confidence* and *belief* in self- care behaviors.

This study tested the following hypotheses regarding older adults' empowerment during a care transition: (a) patient empowerment for self- care will improve following an APN-led transition intervention focused on active patient engagement ; (b) patients with comorbidities and polypharmacy will demonstrate a post-intervention confidence level that is equal to the less complex group; and (c) there will be a positive correlation between patients confidence to perform self-care actions and their belief that these actions will enhance their health outcomes.

Methods

Participants/sample

Using specific inclusion and exclusion criteria, a sample of older adults was recruited from a subacute nursing facility. The researcher utilized an informational flyer, verbal explanation, and a detailed letter to introduce the project to eligible participants. Patients were included if they were 65 years of age or older, were fluent in English, had at least one chronic illness, and were planning a home discharge. Exclusion criteria included admission lasting less than 24 h h, immediate hospice care, and a diagnosis of dementia. Forty patients who met the inclusion criteria were initially approached to participate in the study. Of this original group, four were unwilling to accept home visits, one was admitted to ICU, three were transferred to long term care, and two developed a change in cognitive status. The remaining thirty subjects were recruited, but five did not complete the study, yielding an 83 % participation rate. Three of the thirty participants dropped out of the study voluntarily, and two were readmitted to the hospital before completion of the study. The characteristics of patient participants are outlined in Table 1. Of the 25 patients who completed the study, 32% were male, 68% were female, and the age span was 66 to 88 years, with a mean age of 79.32 and a SD of 6.37. The subjects' educational backgrounds ranged from high school or below (48%) to college (52%). Ninety four percent of the subjects were Caucasian, 4% were Black, and 2% were Hispanic. The project was approved by the institutional review board of both the healthcare organization and the researcher's university.

Design

The project was conducted using a single group pre-and post-intervention pilot study. Participants were provided with an individualized and interactive transition intervention. Before and after the

Table 1
Characteristics of the sample population.

Demographic characteristic	Percent
Gender	32% male
	68% female
Age *	66−69 12%
	70−74 8 %
	75−79 28 %
	80−84 24 %
	85−88 28 %
Education level	Middle school 4%
	High school 44%
	College 52%
Marital status	Single 4%
	Married 32%
	Widowed 60%
	Divorced 4%
Ethnicity	Caucasian 94%
	Black 4%
	Hispanic 2%

*Age Mean 79.32, SD 6.37.

intervention, participants' confidence and belief in self-care activities were measured using a valid and reliable instrument.

Procedure/intervention

During the "**QUEST** to Safe Care at Home" program, participants received two subacute visits, two home visits, and two post-discharge phone calls. During the subacute admission and continuing in patients' homes, an advanced practice nurse coached a population of older adults to ask **Q**uestions, **U**nderstand their treatment plan, become **E**ducated about their medications, know **S**ymptoms to report, and ensure **T**imely post-hospital follow-up. Maximizing patient engagement during transitions requires providers to understand the unique goals that are most relevant to the individual patient.[13] Hence, this project utilized an interactive personalized health journal in which patients wrote their unique personal characteristics such as memories, sources of pride, enjoyable activities, and specific life and health goals. This activity was intended to encourage patients' commitment to their health by emphasizing the most important aspects of their life. In the personalized health journal, patients also wrote their medical history, questions for healthcare providers, a record of medical appointments, plans to manage symptoms, and information about, diagnostic tests, medications and treatment plans. In a continuous relationship with the same advanced practice nurse, patients were actively engaged in the program in the subacute facility and continuing in their home.

Patients were visited by the APN two times during the subacute admission, once within 48 h of admission, and the second within 24 h before discharge. During these two 60-min visits, the researcher encouraged patients to take responsibility for their health by assisting them to enter information into their personalized health journal. After discharge from the subacute facility, the researcher visited the patients at home on two occasions (the first within 48 h of discharge and the second after the follow-up visit with the primary provider). During these two 60-min visits, the researcher assisted patients to update their health journal with specific information about their treatment plan and medications. As a transition coach, the advanced practice nurse also encouraged patients to role-play self-advocacy skills such as asking questions and clarifying unclear information. The script for these roles-play sessions differed according to the patient's individual circumstances. The APN spoke with patients by telephone at seven days and twenty-one days after discharge to address ongoing concerns about medications and symptoms, while reinforcing their confidence in self-care.

The fidelity of this study was strong because it was implemented by one APN who provided a consistent intervention using the same personalized health journal for all participants. The intervention was rendered as intended for the target group and patients provided positive qualitative feedback. All patients were receptive to the visits and phone calls, but there was some variability in the level of detail which patients wrote in their journals. It is unclear whether this affected the results of the study.

This study's feasibility was good since the intervention was carefully designed to be realistically accomplished within the 30-day time frame. One hundred percent of the visits and phone calls were completed since the APN's flexible schedule accommodated patients' changing needs. Participant drop-outs slightly challenged the study's feasibility during the initial recruitment phase. Future replication of this exact project design may not be feasible since the current healthcare system does not support universal reimbursement for the intensive seamless transition care that was tested in this study.

Measures

Before participating in the QUEST transition intervention, patients completed a pre-intervention survey comprised of ten questions from two subscales in the Senior Empowerment and Advocacy in Patient Safety (SEAPS) survey.[12] Data from this pre-survey provided baseline information about patients' pre-intervention level of empowerment. Thirty days after hospital discharge, patients again answered the same ten questions in the SEAPS survey. The pre- and post-survey scores were compared to determine if the intervention engendered any change in patients' level of empowerment.

This project used questions from two subscales in the SEAPS survey. The self-efficacy subscale measured patients' *confidence* in their ability to practice self-advocacy behaviors, and the outcomes-efficacy subscale measured patients' *belief* that these behaviors would improve their health.[11] Using a four-point Likert scale, the data was reported according to the concepts of confidence and belief, as defined in the two respective SEAPS survey subscales.

The SEAPS survey questions addressed the following five items that characterize patient empowerment: (a) learning about one's health; (b) following up on test results; (c) asking health-related questions; (d) giving a personal health history; and (e) asking for family involvement. The developers of the SEAPS survey used a multi-step process to address both content and construct validity. The Cronbach alpha for both subscales in the SEAPS survey was 0.91, and there was no difference by race or education level.[12]

At the beginning of the project, data was collected regarding the number of participants with multiple comorbidities (MC, defined by two or more chronic illnesses), and polypharmacy (PP, defined by five or more daily medications).[14,15] Multiple comorbidities and polypharmacy are two of the most common risk factors for adverse post-discharge events.[16]

Data analysis

The mean of the Likert scores was calculated for the five questions in each subscale of the SEAPS survey. Using SPSS software (version 22), matched pairs of pre- and post-mean scores were compared to determine if there was any change in patients' level of confidence and belief in self-advocacy skills. In addition to analyzing the mean score, Wilcoxon tests were used to calculate the scores for each individual survey item. A Bonferroni Correction was done to adjust the p value to reduce the chance of false positive results in the individual analysis of multiple survey items.

Utilizing separate 2×2 mixed model ANOVAs, the project studied the effect of multiple comorbidities (MC) and polypharmacy (PP) on the pre- and post-survey mean scores for both subscales. Using a Spearman correlation, the data was also analyzed to determine if there was any correlation between patients' belief in the benefit of self-advocacy and their confidence to perform these behaviors.

Results

The study's three hypotheses were supported by the data results for the sample of 25 older adult participants transitioning from sub-acute to home.

Post intervention improvement in patient empowerment for self-care

The mean score on the self-efficacy (confidence) subscale was significantly higher in the post intervention survey (16.32) compared to the pretest (15.32) [t (24) = 3.612, p = .001]. The mean score on the outcomes-efficacy (belief) subscales was also significantly higher following the intervention (15.68) compared to the pretest (14.76) [t (24) = 6.058, $p < 0.001$]. The level of significance for the mean scores was less than .05 (Fig.1).

Four of the five individual items in the self-efficacy (confidence) subscale increased after the intervention, but only three of the scores were found to be statistically significant: learning about health problems (mean increase= 0.8, p = .005); following up on test results (mean increase = 0.16, p = 0.046); and giving a health history (mean increase = 0.4, p = 0.008). In the outcomes-efficacy (belief) subscale, the same four items increased following the intervention, but the scores were statistically significant for only two items: following up on test results (mean increase = 0.44, p = 0.001), and asking questions about one's health (mean increase = 0.4, p = 0.002). Table 2 outlines the results of the pre- and post-scores for the individual questions in both subscales. After the Bonferroni correction, the level of significance for the individual items was less than .01

Effect of comorbidities and polypharmacy on patients post- intervention confidence

Fifty two percent of subjects had multiple comorbidities and sixty four percent had polypharmacy. The results of the ANOVA models showed that subjects with MC had a trend toward a lower pre-intervention confidence score (mean 14.62), compared to a mean of 16.92 in those without MC. More importantly, there was a significant interaction between the MC variable and improvement in confidence following the intervention [(F 1, 23) = 9.042, $p < .005$]. This was driven by a greater increase in confidence within the MC group (mean increase 1.75), compared to those without MC (mean increase 0.308). Similarly, participants with polypharmacy had a lower baseline level of confidence (mean 14.75), compared to those with fewer medications (mean 17.72). Interestingly, those with polypharmacy had
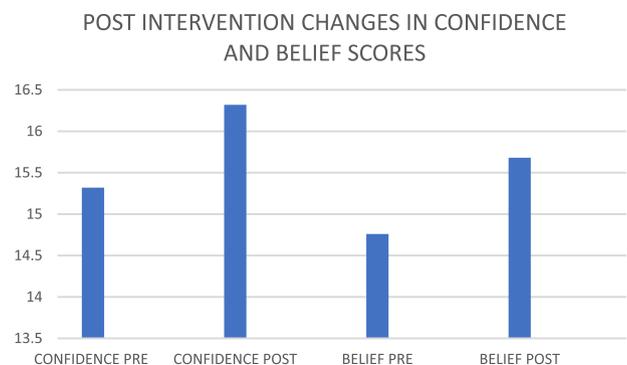

Fig. 1. Post intervention changes in confidence and belief scores.

Table 2
Individual item change in mean scores on SEAPS survey.

Self-efficacy (confidence) items	Pre mean	Post mean	Change	P value
a. How confident are you that you could learn about your own health problems and medicines?	3.56	3.76	0.08	$p = 0.005$**
b. How confident are you that you could call the doctor's office if you haven't received the results of laboratory or X Ray tests?	2.96	3.12	0.16	$p = 0.046$ *
c. How confident are you that you could ask your doctor questions about your health?	2.84	3.08	0.24	$p = 0.24$
d. How confident are you that you could give your doctors a complete and thorough story of your health problems?	2.92	3.32	0.40	$p = 0.008$**
e. How confident are you that you could ask a family member or friend to come with you to doctor's visits?	3.68	3.36	−0.32	$p = 0.005$**
Outcomes (belief) items	Pre mean	Post mean	Change	p-value
a. How strongly do you believe that learning about your own health problems and medicines will improve your health?	2.88	3.72	0.12	$p = 0.083$
b. How strongly do you believe that calling the doctor to get your test results will improve your health?	2.52	2.96	0.44	$p = 0.001$**
c. How strongly do you believe that asking your doctor questions will improve your health?	2.68	3.08	0.40	$p = 0.002$**
d. How strongly do you believe that giving your doctors a complete and thorough story of your health problems will improve your health?	3.04	3.16	0.12	$p = 0.083$
e. How strongly do you believe that asking a family member or friend to come with you to doctor's visits will improve your health?	2.92	2.80	−0.12	$p = 0.046$ *

Bonferroni correction ($0.05/5 = p = .01$) Note: * indicates a significant change at $p < 0.05$, while ** indicates a significant change at $p < 0.01$.

significantly higher post-intervention confidence scores, compared to those taking fewer medications (mean increase 1.50 vs. 0.11) [$F(1, 23) = 5.19$, $p = 0.028$]. Fig. 2 depicts the effect of multiple comorbidities and polypharmacy on patients' pre- and post-intervention confidence scores.

Coorrelation between patients' confidence and belief in self-care actions

Spearman correlation analysis showed that four out of five confidence items positively correlated with the belief items at both the pre and post intervention time points (Table 3). The questions pertaining to family involvement did not demonstrate any significant correlation between confidence and belief.

Fig. 2. Effect of comorbidities and polypharmacy on changes in post-intervention confidence level.

Discussion

Despite a small sample size, this project generated outcomes that support the value of individualized, seamless transition care in improving geriatric patients' empowerment for post discharge self-care. According to data from the SEAPS survey subscales, this project showed a statistically significant mean increase in patients' confidence and belief in self-advocacy behaviors following the intervention.

In addition to an increase in mean scores, patients also showed post-intervention improvement in four individual skills identified as characteristics of empowerment in the SEAPS survey. During the project, several patients stated they felt overwhelmed, and they needed considerable guidance to formulate questions for their healthcare providers, to summarize their health history, and to follow up on diagnostic test results. Elder patients' inability to independently achieve these skills underscores the need for a continuous
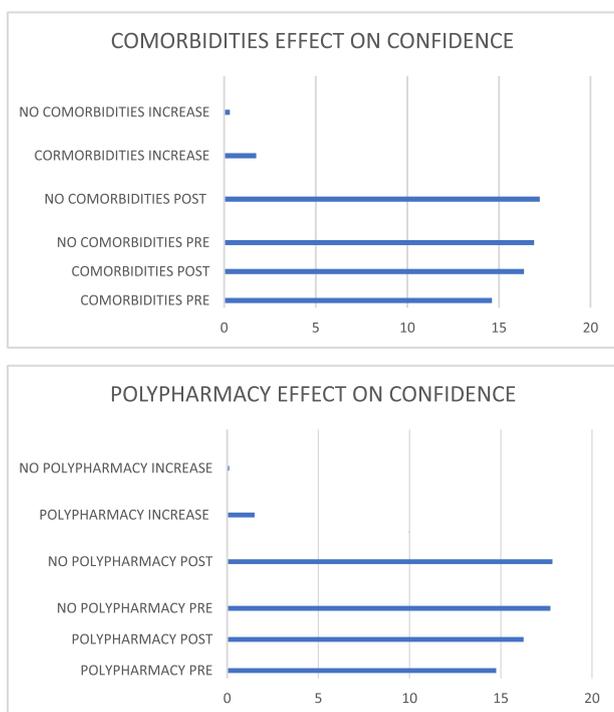
Table 3
Spearman correlation between confidence and belief subscales.

PRE- intervention correlation		B1 pre	B2 pre	B3 pre	B4 pre	B5 pre
C1 pre	Spearman ρ	.603	0.29	.656	.670	0.047
	Sig. (2-tailed)	0.001**	0.16	<0.001**	<0.001**	0.823
C2 pre	Spearman ρ	.765	.547	.556	.621	0.16
	Sig. (2-tailed)	<0.001**	0.005**	0.004**	0.001**	0.444
C3 pre	Spearman ρ	.642	.640	.539	.592	0.1
	Sig. (2-tailed)	0.001**	0.001**	0.005**	0.002**	0.634
C4 pre	Spearman ρ	.776	.542	.555	.623	0.063
	Sig. (2-tailed)	<0.001**	0.005**	0.004**	0.001**	0.764
C5 pre	Spearman ρ	0.314	−0.001	0.322	0.143	0.332
	Sig. (2-tailed)	0.126	0.996	0.116	0.494	0.105
POST-intervention correlation		B1 post	B2 post	B3 post	B4 post	B5 post
C1 post	Spearman ρ	.611	.562	.709	.617	−0.093
	Sig. (2-tailed)	0.001 **	0.003 **	<0.001**	<0.001**	0.659
C2 post	Spearman ρ	.749	.685	.631	.618	0.002
	Sig. (2-tailed)	<0.001 **	<0.001 **	0.001 **	0.001**	0.991
C3 post	Spearman ρ	.530	.727	.615	.641	0.059
	Sig. (2-tailed)	0.006**	<0.001**	0.001 **	0.001 **	0.781
C4 post	Spearman ρ	.730	.642	.751	.637	0.092
	Sig. (2-tailed)	<0.001**	0.001 **	<0.001**	0.001**	0.662
C5 post	Spearman ρ	0.241	−0.101	0.155	−0.009	0.477
	Sig. (2-tailed)	0.246	0.629	0.459	0.966	0.016 *

Note that * indicates a significant correlation at $p < 0.05$, while ** indicates a significant correlation at $p < 0.01$.

coaching relationship with a clinician who is familiar with the trajectory of the illness, as well as the patient's unique story. Future qualitative research would clarify the common themes in patients' experiences with managing their post-hospital care.

There was a significantly higher level of improvement in patients with MC and PP, compared to those without these risk factors. Participants with multiple comorbidities and polypharmacy exhibited lower confidence initially. This finding is likely due to patients feeling overpowered by the tremendous burden of complex illness.[3] It is remarkable that the more complicated patients' post-intervention score increased more than the less complex group. This suggests that while chronically ill patients face greater challenges to self-advocacy, they can acquire empowering behaviors following an individualized intervention. Accordingly, healthcare providers should set the expectation that older adults with complicated issues have an inherent potential to manage their health and to engage in the assertiveness skills needed for self-care.[17] Further research is needed to explore the relationship of empowerment to health complexity, and to test strategies to engage the more complicated patients.

Correlation data generated in this study suggest a positive correlation between patients' confidence to perform self-advocacy behaviors and their belief that these skills will improve their health. When patients believe in their critical role as a health team member, they are more likely to adopt vital self-care attributes.[9] Hence, patients anticipating a transition to home will benefit from education about the value of self-advocacy on safe post-discharge outcomes. In subacute facilities, this education can be conducted during a portion of the designated social activity time, and the information can be further reinforced during individual interactions at the bedside. This is especially important for complex patients with MC and PP since they are less likely to have baseline confidence in their self-care ability. Clinical practice would be enriched by research that explores the relationship between patients' belief in the outcomes of self-advocacy and their ability to engage in these behaviors.

In the contemporary health care system, there is a limited reimbursement for the model of care that was provided in this project. Therefore, nursing leaders must analyze clinical evidence to educate policy makers on this important issue. Until legislation supports reimbursement for continuous in-person transitional care, healthcare organizations need to develop alternative strategies for remote patient contact after discharge to home. The project RED initiative showed a positive outcome in patients who received phone calls from an RN after discharge.[10] Telehealth video technology also has the potential to enhance patient empowerment through interaction with a familiar clinician who encourages self-advocacy behaviors.[18] It would be informative to conduct research that compares the outcomes of face to face transitional care with remote modalities.

Since a growing number of computer-literate seniors are expecting web-based access to their health information, nursing leaders need to leverage information technology systems to design tools to improve patient outcomes.[19] Upon discharge, patients would be empowered by electronic access to key elements of the personalized health journal used in this study, including a summary of their health history, questions to ask their provider, symptoms to recognize, diagnostic tests, and a detailed explanation of current medications.

Interdisciplinary collaboration is also critical to support patients' empowerment and self-advocacy across the care continuum.[20] During this project, interdisciplinary team members utilized team meeting time to discuss patients' level of empowerment and their capacity for self-advocacy. Healthcare providers are accountable to bridge the disjointed inter-professional communication that hinders patients' sense of control after discharge.[20] This is an especially serious problem for patients in subacute facilities where care is managed by in-house clinicians who may not communicate with community-based providers. Consequently, it is essential to develop integrated electronic health records to eliminate dangerous lapses in care, and to expedite the exchange of information among providers across settings.[21]

Limitations

Due to the project's small sample size, the statistical significance was not as robust as it would have been in a larger study. While this study shows promising results, it needs to be replicated on a larger sample with adequate power. Since the original SEAPS survey only tested the reliability of the mean scores, the statistical significance of the specific item data was limited in this study. The validity of this study's data may have also been limited by a ceiling effect since higher initial confidence scores in healthier subjects may have allowed less room for improvement. Since the study participants were culturally homogeneous, the findings may not be generalizable to other populations with different demographic characteristics. Additionally, this research did not adjust for confounding variables such as health literacy, educational level, the degree of community support, and the nature of family involvement. The study site for this project was a subacute facility, so the results may not be transferrable to older adults being discharged directly from hospital to home.

Conclusion

Despite its limitations, this project validates the benefit of continuous individualized transitional care on patient empowerment, and it provides a springboard to investigate the variables that affect patients' capacity for self-care after an acute illness. Geriatric patients need to acquire sustainable self-advocacy skills to support them as they transition across multiple locations. This is especially true for the more complex patients who can benefit most from intensive interventions focused on active patient involvement and provider consistency. Healthcare providers need to emphasize patients' belief in their vital role on the healthcare team and in the value of self-advocacy.

Nursing leaders can improve the quality of transitional care through contributions to interdisciplinary collaboration, healthcare technology, research, and policy development. Enhancing patient empowerment during the post-hospitalization period will improve the integration of care, enhance patient safety, and foster an older generation of engaged healthcare consumers.

Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.gerinurse.2018.07.005.

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