Healthcare Consumers' and Professionals' Perceived Acceptability of Evidence-Based Interventions for Rural Transitional Care

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Abstract

Background. There is a pressing need for high quality hospital-to-home transitional care in rural communities. Four evidence-based interventions (discharge planning, treatments, warning signs, and physical activity) have the potential to improve rural transitional care. However, there is limited understanding of how the perceptions of healthcare consumers and professionals compare on the acceptability of the interventions. Convergent views on intervention acceptability support implementation, whereas divergent views highlight areas requiring reconciliation prior to implementation.

Aims. This study compared the acceptability of four evidence-based interventions proposed for rural transitional care, as perceived by healthcare consumers and professionals.

Methods. A cross-sectional, comparative design was used. The convenience sample included 36 healthcare consumers (20 patients and 16 family caregivers) who had experienced a hospital-to-home transition in the past month and 30 healthcare professionals (29 registered nurses and one nurse practitioner) who provided transitional care in rural Ontario, Canada. Participants were presented with descriptions of the four interventions and completed an established intervention acceptability measure. Presentation of the four intervention descriptions and respective acceptability measures was randomized to control for possible order effects. The perceived overall acceptability of the interventions and their attributes (i.e., effectiveness, appropriateness, risk, and convenience) were compared using the independent samples t-test.

Results. Consumer ratings were consistently higher across all four interventions in terms of overall acceptability as well as effectiveness, appropriateness, and convenience (all p's < .01; effect sizes 0.70 - 1.13). No significant between-group differences in perceived risk were found.

Linking evidence to action. Contextual and methodological differences may account for variability in ratings, but further research is needed to explore these propositions. The results support future qualitative inquiry targeting professionals to better understand their perspectives on the effectiveness, appropriateness, and convenience of the four interventions.

Keywords: Intervention acceptability, Evidence-based interventions, Hospital-to-home transitional care, Rural healthcare, Healthcare consumers, Healthcare professionals.

Introduction

The hospital-to-home transition is a critical period in patients' recovery. It is estimated that one in ten patients experience complications within 30 days of discharge (Hardicre et al., 2021). Patients in rural areas in Ontario, Canada are vulnerable to such complications; approximately 60% of rural patients experience non-urgent health problems, which may be associated with their high prevalence of multiple chronic conditions, low socio-economic status, and less than adequate healthcare resources (Fox et al., 2019). Consequently, there is a pressing need for quality transitional care that provides patients and their families with the knowledge and skills needed to promote recovery and prevent complications.

Hospital-to-home transitional care (hereafter referred to as "transitional care") involves time limited interventions to support patients and their families in managing post-discharge care. Such interventions are delivered predominantly by nurses during and following hospitalization to enhance continuity of care. Four interventions – discharge planning, treatments, warning signs, and physical activity (Fox et al., 2019) – have been found efficacious, to varying extents, in improving self-management, functioning, and health, as well as in preventing complications. However, there is limited evidence of how the perceptions of healthcare consumers (i.e., patients and families) and professionals (i.e., nurses) in rural areas compare on the acceptability of the interventions.

Acceptability refers to the desirability of an intervention to potential healthcare consumers and professionals and denotes favorable attitudes towards an intervention. Attitudes towards an intervention are based on one's understanding of it, and careful judgment of its attributes (Sekhon et al., 2018; Sidani & Fox, 2020). Relevant attributes include: 1) effectiveness, i.e., potential helpfulness in addressing a health issue; 2) appropriateness, i.e.,

suitability in addressing a health issue; 3) risk, i.e., potential side effects associated with an intervention; and 4) convenience, i.e., ease of use (Lengel & Mullins-Sweatt, 2017; Sidani & Braden, 2021; Sidani et al., 2018).

Offering consumers interventions that they desire improves uptake and adherence, and satisfaction with care (Hawkins et al., 2017; Scope et al., 2017). The ultimate benefits include improved health outcomes, as well as reduced costs and wastage of treatment efforts (Sidani & Braden, 2021). Professionals who deliver interventions they see as acceptable are more likely to have high job satisfaction (Sidani et al., 2016). However, healthcare consumers and professionals (hereafter referred to as "consumers" and "professionals") may vary in their beliefs and values, which influence their perceptions of intervention acceptability (Fenwick et al., 2021). For instance, consumers may perceive an intervention as highly acceptable, but professionals may consider it unacceptable and are therefore unlikely to deliver it. When this scenario plays out in practice, it may increase consumers' frustration and dissatisfaction with care leading them to seek the intervention elsewhere. In a similar vein, professionals may view an intervention as highly acceptable and deliver it to consumers; however, consumers who appraise the intervention as unacceptable are unlikely to adopt and/or adhere to it, thereby wasting professionals' valuable time and resources. In short, convergent views on intervention acceptability support intervention implementation, whereas divergent views point to areas for further inquiry to reconcile consumers' and professionals' perspectives prior to implementing the interventions in practice.

The study of intervention acceptability has steadily risen over the past decade alongside growing concerns about intervention uptake (Klaic et al., 2022). Several studies have compared consumers' and professionals' perspectives on the acceptability of a range of proposed healthcare interventions such as opioid-reduction programs (Bedford et al., 2021; Godersky et

al., 2019), mobility technologies for hypertension (Bhandari et al., 2021; Breil et al., 2022), and bystander sexual harassment training (Fenwick et al., 2021). However, we found only one study that focused on transitional care. In that study, convergence was found between consumers' and professionals' perspectives of the perceived acceptability of a transitional care intervention for stroke patients with multi-morbidity (Markle-Reid et al., 2020), but the credibility of the comparison is undermined by the timing and process involved; professionals assessed the intervention while actively engaged in delivering it, whereas patients only assessed the intervention six months after having received it. Moreover, the study did not assess acceptability of the intervention for consumers who declined or dropped out of the study (Markle-Reid et al., 2020), which may limit transferability of the finding given that reasons for declining are often related to intervention acceptability (Sekhon et al., 2021). Lastly, the study only compared the two group's perspectives of the intervention's perceived benefit and, as such, did not provide information on differences or similarities of perspectives on other intervention acceptability attributes such as appropriateness, risk, or convenience. Further research comparing consumers' and professionals' perceived acceptability is therefore needed to expand this body of knowledge.

Study Purpose

This study compared the acceptability of four interventions proposed for rural transitional care, as perceived by consumers and professionals. Specifically, we compared the overall acceptability of the interventions and their attributes (i.e., effectiveness, appropriateness, risk, and convenience).

Evidence-Based Transitional Care Interventions

The four evidence-based interventions (hereafter referred to as "interventions") were designed to address the post-discharge care management needs of patients and their families.

Evidence of the interventions' efficacy in promoting health, and in preventing complications, was synthesized from previous experimental and quasi-experimental studies, and literature reviews (Coleman et al., 2004; Fox, et al., 2013; Fox, Sidani, et al., 2013; Hesselink et al., 2012; Kind et al., 2016; Ray et al., 2015; Resnick et al., 2013). The discharge planning intervention aims to prepare consumers to manage post-discharge care at home. The treatments intervention seeks to enhance consumers' knowledge, confidence, and ability to correctly apply pharmacological (e.g., medications) and non-pharmacological (e.g., wound care) treatments. The warning signs intervention focuses on helping consumers identify and respond to the signs of worsening health conditions. The physical activity intervention strives to promote patient engagement in safe physical activity. The four interventions are detailed elsewhere (Fox et al., 2019).

Methods

This cross-sectional comparative study is part of a multi-method project (Fox et al., 2019). Only the research methods used to assess consumers' and professionals' perceptions of the interventions' acceptability are described here. To control for possible order effects, the sequence for presenting the four intervention descriptions and the respective measure of acceptability was randomized, using a computer-generated randomization scheme.

Setting and Sample

The study targeted English-speaking and reading consumers and professionals aged 18+ in Ontario, Canada. Consumers included patients and families. Eligible patients: 1) had been hospitalized for a medical condition or surgical procedure; 2) were within 30 days of discharge; 3) had no cognitive impairment, indicated by a score $\geq$ 18 on the Montreal Cognitive Assessment with no visual elements (Pendlebury et al., 2013); 4) were at risk for hospital readmission,

determined by a score ≥ 5 on the LACE index (Gruneir et al., 2011) that accounts for length of hospitalization (L), acuity of the hospital admission (A), comorbidities (C) and emergency department visits in the six months before admission (E); and 5) resided in a rural area, identified by a score > 40 on the Rurality Index for Ontario (Kralj, 2000). Eligible families were unpaid, primary caregivers of a relative who would have otherwise met all patient eligibility criteria (except for the cognitive ability criterion) described above. Eligible professionals were nurses employed in hospital or home/community care, working at least 21 hours per week, and providing transitional care to rural-dwelling adults with medical or surgical conditions.

Active and passive strategies were used to recruit consumers and professionals from rural regions in Southwestern and Northeastern Ontario, Canada. The regions were comparable in terms of rurality indices and healthcare resources. In collaboration with staff at participating hospitals and home/community care agencies, research assistants (RAs) actively recruited potential consumers and professionals; staff identified potential participants and introduced the RAs, who explained the study and addressed any questions. Passive strategies included posting flyers in key locations accessible to consumers (e.g., pharmacy bulletin boards), and distributing flyers through email to professionals at participating facilities.

Recruitment occurred in 2018 and 2019. Recruitment strategies yielded 36 consumers and 30 professionals. The total sample size was adequate to detect large effect sizes (quantifying the differences in the mean acceptability ratings) between the groups of consumers and professionals, setting the power at .80 and p-level at .01 (Cohen, 1992).

Variables and Measures

Characteristics of Consumers

Consumers' age, gender, education, marital status, employment status, and ethnicity were assessed using standard self-report questions. Information was gathered on patients' reason for hospitalization, length of stay in hospital, LACE index, and Rurality Index of Ontario. This information was collected on patients who enrolled in this study and on patients whose families participated in the study, by extracting relevant data from patients' health records, or self-report.

Characteristics of Professionals

Professionals responded to standard questions inquiring about age, gender, level of education, ethnicity, hours worked (full-time, part-time), sector in which they worked (e.g., hospital, home/community care), and job category (e.g., staff nurse, care coordinator).

Perceived Acceptability of the Interventions

Consumers' and professionals' perceived acceptability of the interventions was measured by the acceptability scale of the larger Treatment Acceptability and Preference Scale, which has demonstrated reliability and validity (Sidani et al., 2018). The acceptability scale provided a written description (that detailed its goals, components, activities, mode and dose of delivery) of each intervention followed by a set of items to rate the intervention's attributes of effectiveness (2 items), appropriateness (2 items), risk (1 item), and convenience (2 items). A five-point scale, ranging from *not at all* (0) to *very much* (4) was used in the rating. Scores were computed for each attribute (i.e., subscale) and for the overall acceptability (i.e., total scale) of each intervention, by taking the mean of the respective items' scores. In this study, the acceptability scale demonstrated internal consistency reliability; the Cronbach's alpha coefficient for the total scale ranged from 0.85 to 0.89 across the four interventions.

Research Ethics

The study received approval from York University (#e219-241) and Health Sciences North (# 18-053) Research Ethics Boards. Written consent was obtained from all participants.

Data Collection

Consumers were administered the scale by telephone. Prior to the phone call, the RA mailed the measures and intervention descriptions, so that participants could familiarize themselves with the materials beforehand and follow along as the RA read the measures and intervention descriptions aloud. Professionals reviewed the intervention descriptions and completed the measures on an online survey platform.

Data Analysis

Descriptive statistics, commensurate with each variable's level of measurement, were used to describe the two groups' demographic characteristics and average standing on the acceptability measures. Acceptable interventions had a mean rating > 2 (i.e., midpoint of the response scale). The independent samples t-test was used to compare the two groups' perceptions of each intervention according to the four attributes of acceptability (i.e., effectiveness, appropriateness, risk, and convenience) as well as the total acceptability scale score. In situations where the assumption of equal variances was not met, we report the unequal variances t-test. Effect sizes (ES) were calculated as the standardized difference in the means of consumers' and professionals' scores on the acceptability scales and subscales using Cohen's formula, with the interpretation of the magnitude of the ESs as <.20 (no difference); .20–.49 (small); .50–.79 (medium); and >.80 (large) (Grissom & Kim, 2012).

Results

Participant Characteristics

Study participants included 36 consumers (20 patients and 16 families) and 30 professionals (29 registered nurses and one nurse practitioner). Participants' characteristics are displayed in Table 1. Consumers were mostly women (63.9%) with a median age of 54.9 years (range 20 – 81). Most consumers were married or common law (63.9%), employed full time (36.1%), and identified their ethnicity as Caucasian (97.2%) and highest level of education as college diploma, trades certificate or apprenticeship (41.7%). The median rurality index was 51.5 (range 42 – 80).

Professionals were also mostly women (96.7%) with a mean age of 33.8 years ($\pm$ 9.8). They had a baccalaureate degree in nursing (83.3%) and were working full-time (56.7%) as staff nurses (73.3%) in a hospital (73.3%). On average, they had been practicing for 6 years (range 1 – 33 years) and had been in their current positions for 2.8 years (range 1 – 22 years).

Participants' Perceptions of Intervention Acceptability

Table 2 presents the mean scores on the scales and subscales of the acceptability measure for each of the four interventions. The mean scores for the scales and subscales were generally greater than 2, indicating that both consumers and professionals perceived the four interventions as acceptable overall, as well as acceptable specifically in terms of their effectiveness, appropriateness, and risk. Only the convenience subscale of the physical activity intervention was rated less than 2, and only by professionals.

Comparison of Consumers' and Professionals' Perceptions of Intervention Acceptability

As indicated in Table 2, consumers' mean scores on overall acceptability were consistently higher than professionals' mean scores across all four interventions (all p's < .01;

effect sizes 0.85 - 1.00). In terms of the different attributes of acceptability, consumers' mean scores were higher on effectiveness (all p's < .01; effect sizes 0.72 - 0.88), appropriateness (all p's < .01; effect sizes 0.70 - 0.81), and convenience (all p's < .001; effect sizes 0.93 - 1.13) than those of professionals across all four interventions. For risk, no significant between-group differences in the mean scores were identified for any of the interventions.

Discussion

Our study adds to the burgeoning literature emphasizing the importance of comparing the perspectives of consumers and professionals on the acceptability of proposed interventions. Our results are consistent with the only other study to have examined a transitional care intervention in this comparative manner (Markle-Reid et al., 2020). Unlike Markle-Reid's et al.'s study, however, our study quantified group differences in perspectives using an established intervention acceptability scale.

Both professionals and consumers in our study gave high overall intervention acceptability ratings. Consequently, the four interventions represent viable options for rural transitional care. Professionals may use the interventions with consumers in rural areas who, based on the results, are likely to be receptive to using them.

Despite both groups' high intervention acceptability ratings, there were notable differences that were medium to large in magnitude. Consumer ratings were consistently higher across all four interventions in terms of overall acceptability and the attributes of acceptability (apart from perceived risk). As we seek to explain these differences, we consider several possible methodological and contextual explanations.

First, it is possible that the different modes of administering the scales may account for the overall differences in perspectives (Plante et al., 2012). The scales were

interviewer-administered to consumers whereas professionals self-administered the scales. Second, consumers may have been coming from their own vantage point when rating the interventions' effectiveness and may have recognized potential for the interventions to greatly improve their recent experience transitioning from hospital to home. Professionals may have considered the target population in general and may have been thinking of acceptability of the interventions to the range of patients and families to whom they provide transitional care. Consequently, professionals may not have seen the interventions as having the same potential as consumers to improve the experiences of patients and families more generally.

Third, professionals may have been aware of system-level barriers to implementing the interventions and may have taken these into account when rating the interventions' appropriateness and convenience, thus producing lower scores than consumers. Lastly, the two groups may have had different motivations when considering the interventions and thus varied in their perceptions of the interventions' acceptability (Breil et al., 2022). Consumers may have been focusing on the interventions' capacity to improve post-discharge care management and perceived that as meriting any inconvenience involved, whereas professionals may have been focusing on the potential for the interventions to increase their workloads. That the variability in perspectives on convenience was large in magnitude across all four interventions suggests that professionals may have been particularly concerned with workload. Given the current focus on early hospital discharge, professionals experience high patient turnover and volume as well as increased work related to admitting and discharging patients (Park et al., 2016). Other research has identified that professionals often have difficulty prioritizing transitional care because of high patient acuity as well as limited time and resources (Allen et al., 2017). For example, hospital-based professionals may experience difficulties coordinating care with patients, their

family caregivers, and other healthcare professionals who are likely to be practicing in another workplace (Allen et al., 2017). Transitional care requires time to meet and communicate with these various groups of individuals, which may be difficult to do in practice (Allen et al., 2017)

Implications for Future Research

That both consumers and professionals perceived the four interventions as highly acceptable justifies progressing to future studies evaluating the effectiveness of the interventions in rural areas, where testing has been limited. Further research is warranted to validate the reasons we proposed for the between-group differences in acceptability ratings and illuminate any other sources of the differences, particularly for the physical activity intervention which, on average, professionals rated low on convenience. Researchers may focus their inquiry on professionals' perspectives on aspects of the physical activity intervention perceived as inconvenient and how these aspects may be addressed. Such research is imperative given that patients with low physical activity in the post-discharge period are at risk for poor health outcomes and 30-day hospital readmission (Alqahtani et al., 2020; Chawla et al., 2014; Waring et al., 2017) and more than half of older patients do not return to their pre-hospital level of physical functioning within one year of discharge (Zisberg et al., 2015).

Other researchers may use our systematic approach to compare consumers' and professionals' perceived acceptability of transitional care interventions in other populations and settings. This approach rests on providing participants with a clear and detailed description of the intervention, which assists participants to understand the intervention under consideration. This understanding is necessary prior to appraising the interventions relative to their main attributes (Sidani & Fox, 2020). The approach can highlight differences in perceived acceptability that can then be explored in greater depth qualitatively to generate findings that can form the basis for

adapting the interventions to a new context. Researchers can subsequently evaluate the adapted interventions if there is uncertainty about their effectiveness in the new context (Moore et al., 2021). For instance, the results of our study have spurred us to zero in on professionals' perspectives, particularly on the inconvenience of the interventions, in focus groups to deepen understanding of their perspectives. We will use the results to adapt the interventions to the Ontario nursing practice context.

Study Limitations

The presence of the RA during consumer data collection may have led to socially desirable responses. The study was limited to one Canadian province and the findings may not be generalizable to other jurisdictions. It is possible that participants' characteristics such as consumers' level of education, and professionals' training, may have influenced the intervention acceptability ratings, thereby partially accounting for the reported differences. Future research is needed to explore what personal and socio-environmental characteristics are associated with intervention acceptability.

Conclusions

Overall, consumers and professionals perceived the four interventions to be highly acceptable. These interventions thus represent viable options for rural transitional care in Ontario, Canada. We identified medium to large between-group differences in perceived acceptability across all four interventions, which we propose are accounted for by methodological and contextual factors. Further research is needed to validate these propositions and explore professionals' perspectives in greater depth.

Linking Evidence to Action

- Overall, consumers and professionals both perceived the four interventions to be highly acceptable, but professionals rated the physical activity intervention low on convenience.
- The interventions represent viable options for rural transitional care, but qualitative inquiry is needed to better understand aspects of the physical activity intervention perceived by professionals as inconvenient, and how those aspects may be addressed.
- Consumer ratings were consistently higher across all four interventions in terms of overall acceptability as well as effectiveness, appropriateness, and convenience but not risk.
- Contextual and methodological differences may account for the variability in ratings, but further research is needed to validate these propositions.

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Table 1. Description of healthcare consumer and healthcare professional characteristics

Characteristics	Consumers (n = 36)		Professionals (n = 30)	
	n (M)	Valid % (SD)	n	Valid %
Gender				
Woman	23	63.9	29	96.7
Man	13	36.1	1	3.3
Ethnicity[¥]				
Caucasian (white)	35	97.2	27	90.0
Aboriginal	1	2.8	2	6.7
South Asian			1	3.3
Black			1	3.3
Relationship status				
Single	7	19.4		
Married or common law	23	63.9		
Widowed	2	5.6		
Divorced	3	8.3		
Separated	1	2.8		
Education				
Some secondary/high school	5	13.9		
Completed secondary/high school diploma or equivalent	10	27.8		
College diploma, trades certificate or apprenticeship	15	41.7		
Bachelor's degree	5	13.9		
Master's degree	1	2.8		
Employment status				
Employed full time	13	36.1		
Employed part time	6	16.7		
Unemployed	7	19.4		
Retired	10	27.8		
Reason for hospital admission				
Medical illness	26	72.2		
Surgical procedure	10	27.8		

Hospital length of stay (*in days*)	(7.2)	(3.4)		
LACE index	(10.5)	(2.3)		
Highest level of education in nursing				
Diploma in nursing			3	10.0
Degree in nursing			25	83.3
Master's degree in nursing			2	6.7
Professional designation				
Registered nurse			29	96.7
Nurse practitioner			1	3.3
Sector of employment[¥]				
Home care			9	30.0
Hospital			22	73.3
Community clinic			3	10.0
Other			3	10.0
Position[¥]				
Staff nurse			22	73.3
Discharge planner			1	3.3
Rapid response nurse			4	13.3
Care coordinator/case Manager			4	13.3
Geriatric emergency management (GEM) nurse			1	3.3
Hours worked				
Full-time			17	56.7
Part-time			13	43.3

Notes. [¥]Total for these variables is ≠ 30 for healthcare professionals because a respondent could select more than one option. M = mean. SD = standard deviation.

Table 2. Results of t-tests comparing consumers' and professionals' acceptability ratings on the interventions

	Discharge planning				Warning signs			
	Consumers M(*SD*)	**Professionals** M (*SD*)	t-test	Cohen's d	Consumers M(*SD*)	**Professionals** M (*SD*)	t-test	Cohen's d
Subscales								
Effectiveness	3.31 *(0.71)*	2.63 (*0.98*)	¥3.13**	0.74	3.49 (*0.63*)	2.70 (*0.98*)	¥3.80***	0.88
Appropriateness	3.28 (*0.80*)	2.60 (*0.89*)	3.25**	0.75	3.50 (*0.67*)	2.90 (*0.70*)	3.56**	0.81
Risk	3.81 (*0.58*)	3.87 (*0.35*)	ns	0.13	3.89 (*0.52*)	3.55 (*0.87*)	ns	0.47
Convenience	3.24 (*0.68*)	2.18 (*0.98*)	¥4.43***	1.11	3.29 (*0.72*)	2.40 (*0.99*)	4.21***	0.93
Scale								
Total Score	3.35 (*0.53*)	2.75 (*0.75*)	¥3.66**	0.85	3.49 (*0.52*)	2.79 (*0.70*)	4.64***	1.00
	Treatments				**Physical activity**			
	Consumers M(*SD*)	**Professionals** M (*SD*)	t-test	Cohen's d	Consumers M(*SD*)	**Professionals** M (*SD*)	t-test	Cohen's d
Subscales								
Effectiveness	3.44 (*0.63*)	2.90 (*0.80*)	3.09**	0.72	3.48 (*0.56*)	2.83 (*0.93*)	¥3.34**	0.80
Appropriateness	3.42 (*0.79*)	2.83 (*0.79*)	2.99**	0.70	3.42 (*0.81*)	2.72 (*0.82*)	3.49**	0.80

Risk	3.64 (*0.90*)	3.63 (*0.85*)	ns	0.01	3.64 (*0.80*)	3.83 (*0.46*)	ns	0.29
Convenience	3.29 (*0.71*)	2.20 (*0.90*)	5.52***	1.13	3.04 (*0.94*)	1.92 (*0.86*)	5.04***	1.06
Scale								
Total Score	3.42 (*0.56*)	2.79 (*0.62*)	4.35***	0.95	3.38 (*0.57*)	2.70 (*0.67*)	4.43***	0.97

Notes. M = mean. SD = standard deviation. ns = not significant

**p < 0.01, ***p < 0.001

¥Equal variance not assumed