

Transitional Care Models for Stroke Survivors to Improve Quality of Care through Bridging the Care Gap from Hospital to Home: A State of Art Review

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ABSTRACT

Introduction : Stroke is a life threatening medical emergency that occurs suddenly and impact greatly in all aspect of an individual's normal life since the early stage to long term. Various types of transitional care models are using by Health systems to improve care transition among stroke patients. Aims:

This paper aims to explore the existing transitional care models used to improve the quality of care and patient's outcome among stroke survivors.

Methods: An Integrated review was conducted of empirical literature available in PubMed, Google Scholar, ProQuest, and NepJol by June 20, 2022 to identify studies of hospital to home care transitions of stroke patients with quality of care as the primary outcome.

Results: There are 6 main types of transitional care model which focused on care transition for stroke survivors: 1) Naylor's Transitional Care Model (TCM), 2) Coleman's Care Transition Interventions (CTI), 3) Project Re-engineered Discharge (project RED), 4) Better Outcomes by Optimizing Safe Transition (Project Boost), 5) Enhanced Discharge Planning Program and 6) Comprehensive Post-Acute Stroke Services (COMPASS). Although, all models are differing by design, each of the models can provide a framework for managing health conditions from hospital to home settings in collaboration with the client and his/her family. Hence, the transitional care Models are effective to bridge the care gap between hospital to home and improve the quality of health care and patients outcomes among stroke survivors.

Keywords: Stroke, Transitional care, Care transition, Transitional care model, Early discharge planning

INTRODUCTION

Stroke is a life-threatening condition; however, stroke patients can return to participate in usual self-care and daily activities as independently as feasible. The time, patterns and intensity of rehabilitation needs are changed over time across the care continuum and vary in each individual due to the reality of stroke patients of various aspect of health and functional impact as well as varying trajectories of recovery periods of its impact. This phenomenon may lead to complexity of the rehabilitation process to the stroke survivors. Therefore, current evidence based practices need to be employed to improve the effectiveness and efficiency of rehabilitation for people with stroke.

Currently, various types of evidence-based practices are extensively trailed and demonstrated the efficacy of practice having common goal to improve the health condition of stroke patients. [1]

A model is a visual representation of concepts or process of care. Originally transitional care model (TCM) was developed by University of Pennsylvania School of Nursing with the aims to facilitate earlier hospital discharge of vulnerable patients as a substitution of hospital care through transitional home follow up care by Advanced Practice Nurses. [2] Similarly, common outcomes of the TMC were focused on prevention of health-related complications and re-hospitalizations of

chronic ill elderly hospitalized patients by providing comprehensive discharge planning and home follow up care by nurses who are trained in the care of chronic conditions. [3] The core features of Transitional Care Model were comprehensive in-hospital planning and home follow-up care through home visit and telephone call. [4] Later on, a number of TCM were developed and implemented to improve quality of care and bridging care gap from hospital to home of stroke survivors. In this background, this paper aims to explore the existing Transitional Care Models used among stroke survivors to improve the quality of care and patients' outcomes through bridging the care gap.

METHODS

An Integrated review was conducted of empirical literature available in PubMed, Google Scholar, ProQuest, CINAHL, and NepJol by June 20, 2022 to identify studies of hospital to home care transitions of stroke patients with Quality of care as the primary outcome. Data extraction on study design and intervention components was limited to studies of adult stroke patients. The findings from the existing literature are described as following.

RESULTS

Currently, Transitional Care Models were broadly used for managing the vulnerable people and their family caregivers for bridging the care gap between hospital to home which ultimately improved quality of care. [6] and health outcomes of stroke survivors. [6] TCMs were used as a framework for providing patient centered care process for early recognition and resolution of health problems. The benefits in utilizing these models during transitions phase were to reduce and prevent potential complications, unscheduled emergency visit, hospital readmission, and its associated costs.

It was found that there were six existing transitional care models that were used as a framework among stroke survivors from hospital to home settings. They are 1) Naylor's transitional care model (TCM), 2) Coleman's Care Transition Interventions (CTI), 3) Project Re-engineered Discharge (project RED), 4) Better Outcomes by Optimizing Safe Transition (Project Boost), 5) Enhanced Discharge Planning Program and 6) Comprehensive Post-Acute Stroke

Services (COMPASS). [7-11] All the models were described in Table 1. Although all models are differing by design, each of the models can provide a framework for managing health conditions across settings of care in collaboration with the stroke survivors and his/her family and coordinated by nurses.

All models were trialed with chronic illness included stroke but there is no single study to support exclusively for stroke patients. However, existing substantial literature review showed that Naylor's Transitional Care Model (TCM) is more effective model for early recognition and resolution of changes in a patient's health outcomes such as preventing potential complications / adverse events, lessening days of hospital stay, patients satisfaction, its associated costs as well as improving the quality of care in the setting from hospital to home. The description of this transitional care model is as follows

Naylor's Transitional Care Model (TCM).

The Naylor's Transitional Care TCM is a nurse-developed and nurse-led, multidisciplinary approach providing comprehensive, holistic care to older adults hospitalized with chronic illness conditions. [2, 7] A major emphasis of this model was client-family understanding and management of health issues, and early identification and response to potential problems to prevent decline in client health status.

Transitional Care Nurse (TCN) works as a care coordinator during hospitalization and after discharge. At hospital, the nurse 1) conducts daily patient visits with focus on maximizing the patients' health for discharge 2) conducting the comprehensive assessment of the health of the patients, health behavior, level of social support and goal, 3) develops the evidence-based guideline and plan of care in collaboration with the patients, family members and health care team. Similarly, after discharge, the nurse performs series of home visit, telephone follow up calls and facilitates the communication with outpatient's providers. During home visit and phone call, nurses should focus on two main things 1) identification of changes in patients' health 2) managing or preventing those health problems.

The core components of Naylor TCM were summarized by Wong et al. (2005) for chronic illness patients. [12] They were comprehensiveness, collaboration, coordination and continuity of care. Those components are described as following.

Comprehensiveness

There are several features commonly found in the design of interventions among the Transitional care studies. The interventions mainly focused on health assessment and management [2, 12 - 15], provision of health information, [6, 13,14, 15] patient education and promotion of self-management skills through teach-back methods to ensure the understanding and enhance adherence behavior in medication, diet, exercise and healthy lifestyles, physical exercises and ADL training signs and symptoms assessment and management and mobilization of health and social resources. [12, 15, 16] In addition to comprehensive management focus on reduction of modifiable risk factors, maintenance of health status, and management of post stroke complications [14]. Similarly, Puhr & Thomson (2015) had done systematic review of transitional care model in stroke patients, concluded 13 randomized control studies with stroke patients. The interventions of those studies are varies however, some common interventions are comprehensive discharge planning, stroke education, emotional support to patients and caregivers, medication reconciliation, ongoing rehabilitation/ physical therapy, individualized care and connecting to patients with community based services. All most all studies initiated in hospital and continue to home through telephone call and home visit. [18]

A systematic review of 27 transitional care studies with acute stroke care recommended that the hospital initiated transitional care strategies can improve some outcomes including reducing hospital days and improving physical activities for neurological patients. The authors also concluded that hospital-initiated strategies focusing on coordination of care are important determinant for improving health care. [19] Another study also reported that, home-visiting programs those led by multidisciplinary team can reduce mortality in all the follow-up times and enhances the activities of daily living for stroke survivors after hospital discharge. [6]

Coordination and collaboration of care

Nurses can play primary care coordinators in transitional care model, as well as play the primary role as a transitional care coach, holistic care manager, case managers, holistic nurse manager and community nurse with special training. [12, 14, 15] However, systematic review studies suggested that patients and family caregiver's engagement in care process, use of a dedicated transitions provider and facilitation of communication with out-patients providers require time and resources for successful implementation of transitional care for stroke patients. [19, 20]

Continuity of care or/ Follow up visit

Continuity of care is also called continuum of care is to what degree the care is coherent and linked to one setting to another setting. The dimensions of continuity of care based on person and disease comprises informational continuity, relational continuity and management continuity. For the continuity of care, nurses performed series of home visits and telephone calls with patients and caregivers based on standards protocol. The continuity of care or post discharge interventions lasted for 1- 3 months. [3, 4, 14]. Some studies mentioned about sole telephone follow-ups also promoted positive health outcomes by bringing lifestyle changes and quality of life ultimately improved health outcomes. [15, 21] Other studies consider the home visit as the major component in transitional care. [6, 13, 15] Additionally, most of the studies used both telephone call and home visit as a continuity of care. [15]

Outcomes of the existing studies related to transitional care Model

A systematic review of 13 randomized control trial studies regarding transitional care model for stroke patients reported the significant improvement in satisfaction and less adverse events, stroke knowledge and cost of care. [18] Likewise, another systematic review with 12 RCTs summarized about quality care outcomes following transitional care interventions concluded that patients and family center care outcomes were limited in pertaining to the patients and carer experience, carer burden, care competency skill and emotional support for patients and carers. [22]

The TCM with four components was used as a framework and tested through randomized control trial (RCT) for providing stroke rehabilitation. The study revealed that nurse-led transitional care interventions demonstrated a significant improvement in self-efficacy, increased QOL in stroke survivors, stroke-related knowledge, and reduction in unplanned hospital readmissions and caregiver-related burden. [6] Likewise, all TCM components were also tested by randomized controlled trial studies in stroke patients found the significant effect on quality of life, functional ability, reduction of complications and adverse events. [23]

Moreover, a randomized control trial on providing the hospital initiated holistic transitional care intervention for stroke rehabilitation reported the quality of life, patients' satisfaction, functional outcomes, depression was measured by SP-36 and WHO-QOL-spirituality, Religion & Personal Beliefs. The result showed significant improvement in intervention group compared to usual care on satisfaction score ($p=0.001$); Barthel index ($p=0.001$), Depression ($p=0.001$) and total score of quality of life ($p=0.001$) after intervention compared to usual care. However, the holistic intervention was based on Chinese culture. [15] The setting of the study might not fit in context of resource limited countries like Nepal because of limited resources, cultural variation and difference in system of care for stroke patients as well.

Likewise, most of the transitional care study measured the physical health outcomes: neurological function, functional wellbeing, physical status, mobility function, self-care ability, self-efficacy, and signs and symptoms assessment. [4, 6, 14] In the aspect of psycho-social care in terms of psychological or social support, emotional support was only found in a few studies. [15, 24] Physical component of care was focus in stroke transitional care studies such as exercise, mobility and ADL training as well as prevention for stroke complications. [14,15]

The most frequently documented psychosocial health outcome such as depression was measured in few studies. Apart from this, quality of life measures in four dimensions; physical, functional, psychological and social health were measured using short form

(12 items and 36 items) health-related quality of life instruments. [14, 15]

The American Nurses Association (ANA) identified patient satisfaction with nursing care as a key nurse-sensitive outcome. It is an essential quality indicator to capture key aspects of nursing care quality. However, this outcome was measured in two studies. [4, 15]

CONCLUSION

In summary by reviewing the outcome measures reported in previous transitional care studies in regard to quality of care, the majority of outcomes measured for evaluation were readmission rate, length of stay and net cost. There are no existing studies which directly addressed the process measure for evaluation which is directly link to nursing care quality such as patient's outcome: safety, satisfaction and functional status, however, patient's satisfaction was measured in limited studies. Other process related outcomes such as satisfaction on care process, reduction of adverse events and prevention of medical complications are directly linked with quality of care in care process. Most of the study protocol content about patient self-management as well as symptoms management and medication reconciliation for patients' safety. There are very few studies measured the outcome of family caregivers however, family care givers are equally involved in care process and transits with patients together and felt puzzle and crisis in patients' care. So that existing studies still have paucity or show the clear gap in quality of care process in transitional care studies including stroke patients.

Table 1: Description and Comparison of Transitional Care Models

Model	Naylor's TCM	Coleman CTI	Project RED	BOOST	COMPASS	ESD
Essential elements	<ol style="list-style-type: none"> 1. Preparation of TCN guided by MDT through training 2. TCN is primary care coordinator 3. In Hospital assessment & EB nursing care plan 4. Home visit & telephone call by TCN 5. Physician- nurse collaboration 6. Individualized holistic care 7. Educational support to patients and Care givers 8. Early identification & response of problems 9. Patients & CG in team 10. TCM hospital discharge screening tool for high risk 11. Open communication 	<p>Four Pillar</p> <ol style="list-style-type: none"> 1. Medication 2. patients center records 3. Follow up 4. Red flag 	<ol style="list-style-type: none"> 1. Education related to diagnosis, diet medication and exercise 2. Post discharge appointment, tests etc 3. Discharge reconciliation with national guideline; 4. Emergency plan, 5. Follow up care 	<ol style="list-style-type: none"> 1. Patients preparation 2. Teach back process 3. Risk specific intervention 4. Written discharge instruction 5. Technical assistance used combined with CIT or TCM 	<ol style="list-style-type: none"> 1. Identifying and enrolling eligible patients (experienced a stroke or transient ischemic attack), 2. Providing educational materials to patients at discharge 3. Communicating with patients within 2 days post-discharge 4. conducting an outpatient clinic visit to develop an individualized electronic care plan for each patient, 5. connecting patients with relevant community resources (home health providers, pharmacy services, local support groups). 	<ol style="list-style-type: none"> 1. Early and complete assessment of discharge needs and medication reconciliation. 2. Patient & caregiver education and counselling 3. Timely and complete communication of management plan 4. Early postacute follow-up within 24–72 h for high-risk patients by HCP 5. Early postdischarge nurse phone calls or home visits plans in high-risk patients. 6. Appropriate referral for home care & community support services when needed
Primary role	Nurse as a coordinator	Nurse as a coach	Nurse and pharmacist	Not specified	Registered nurse Advanced Practice Providers (APPs) and physicians on post-acute clinic visits	Nurse, physiotherapist and occupational therapist
Setting	Hospital acute care to Home	Hospital to home	Hospital to community	Hospital to home	Hospital to home	Hospital to home
Target population	Age > 65 years, hospitalized patients of various chronic illness	Age > 65 years, hospitalized patients of non- psychiatric illness	Age > 18 year hospitalized and plan to discharge to community	>65 years with 7 medication & risk factors lack of support & discharge to home	Not specified, however, survivors of stroke and TIA	Not clear, but ESD is the substitute & continuity of hospital care for those who discharged home early from hospital.
Pre discharge services	<ul style="list-style-type: none"> • Daily visit by nurses within 48-hour after hospital admission. Hospital visit is continue until discharge 	Before: APN or RN coach meets with patients at least once in hospital.	Before: Nurse discharge advocate meets with patients at least once in hospital.	Frequency of contact is not specified.	First visit within 2 days of hospitalization	Focus on acute care

Post discharge care	<ul style="list-style-type: none"> To minimum home visits. & additional visits as needed; First visit within 24 hours of discharge; Telephone call: at least weekly phone contact with patient or caregiver by TCN phone support 7 days per week APN accompanies patient to 1st follow-up 	One home visit within 48 to 72 hours after discharge; 3 phone calls	One phone call. pharmacist calls patients 2 to 4 days after discharge	One phone call recommended for high-risk patients within 72 hours of discharge.	Within 14 days of discharge from hospital	Not clearly specified but nurses and other health care team do the home visit
Post-discharge time frame	28-90 days	30 days	2-4 days a	3 days	2 day call and visit within 14 days	7 days to 5 weeks but not clear

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