

Literature Review

The Impact of Transitional Care for Geriatric Patients with Chronic DiseasesRetno A. Werdhani,^{1*} Kitra Latuasan,¹ Siti Z. Afifah²¹Department of Community Medicine, Faculty of Medicine Universitas Indonesia, Jakarta²Faculty of Medicine, Sebelas Maret University, Surakarta

*Corresponding author: retno.ast@ui.ac.id

Received 18 May 2023; Accepted 31 July 2023

<https://doi.org/10.23886/ejki.11.412.189>**Abstract**

Indonesia has gradually become an aging society as socio-demographic changes happen in the last decades, affected the health care system in many countries. An increased hospital readmission rate and prolonged hospitalization in elderly patients due to chronic illness have been a new challenge. A comprehensive plan to ensure the coordination and continuity of health care after hospital discharge is needed to improve the sustainability of long-term management. In 2021, literature was searched on the PubMed, ScienceDirect, and Cochrane electronic databases with keywords for transitional care, geriatric, and chronic disease. Inclusion criteria were randomized controlled trial (RCT), systematic review, or meta-analysis studies that implemented transitional care intervention (TCis) for people older than 60 with chronic diseases. Studies were limited to those published in the past ten years and published in Bahasa/English. Critical appraisal was assessed using the PRISMA guideline. We identified 107 records. Seven articles met the inclusion criteria. Outcome assessments were conducted from one to 12 months after discharge. TCis were divided into 3 points: before discharge, after discharge at home, and throughout the entire period. Readmission was measured in most studies (n=7), mortality (n=4), and emergency department (ED) visit (n=3). Most of the study showed a positive impact in the intervention groups (IG) compared to the control groups (CG). Transitional care is beneficial for geriatrics with chronic disease as it reduces hospital readmission rates, mortality, and ED visit. Five domains should be addressed to have effective transitional care: comprehensive assessment, planning and communication, support for self-care and the caregiver, access facilitation, and a competent healthcare team.

Keywords: transitional care, chronic disease, long-term disease, geriatric, hospital readmission.

Dampak Perawatan Transisional untuk Pasien Geriatri dengan Penyakit Kronis**Abstrak**

Populasi usia lanjut di Indonesia semakin meningkat dan perubahan sosio-demografis yang terjadi dalam beberapa dekade terakhir ini, mempengaruhi sistem kesehatan di banyak negara. Peningkatan kasus rawat inap di rumah sakit dan perawatan berkepanjangan pada pasien usia lanjut karena penyakit kronis menjadi tantangan baru. Dibutuhkan pengelolaan komprehensif untuk memastikan koordinasi dan kesinambungan perawatan kesehatan setelah keluar dari rumah sakit sebagai bagian dari manajemen kasus jangka panjang. Pada tahun 2021, literatur dicari di database elektronik PubMed, ScienceDirect, dan Cochrane dengan kata kunci untuk perawatan transisi, geriatri, dan penyakit kronis. Kriteria inklusi adalah uji coba terkontrol secara acak (RCT), tinjauan sistematis, atau studi meta-analisis yang menerapkan intervensi perawatan transisional (TCis) untuk orang berusia di atas 60 tahun dengan penyakit kronis. Studi terbatas pada yang diterbitkan dalam sepuluh tahun terakhir dan diterbitkan dalam bahasa Indonesia/Inggris. Penilaian kritis dinilai menggunakan pedoman PRISMA. Kami mengidentifikasi 107 artikel. Tujuh artikel memenuhi kriteria inklusi. Penilaian hasil dilakukan dari satu sampai 12 bulan setelah keluar dari rumah sakit. TCis dibagi menjadi 3 poin: sebelum pulang, setelah pulang, dan sepanjang periode. Kunjungan re-admisi diukur dalam kebanyakan penelitian (n=7), mortalitas (n=4), dan kunjungan gawat darurat (ED) (n=3). Sebagian besar penelitian menunjukkan dampak positif pada kelompok intervensi (IG) dibandingkan dengan kelompok kontrol (CG). Perawatan transisi bermanfaat untuk geriatri dengan penyakit kronis karena mengurangi tingkat rawat inap kembali ke rumah sakit, kematian, dan kunjungan UGD. Lima domain harus dikelola untuk memiliki perawatan transisi yang efektif: penilaian komprehensif, perencanaan dan komunikasi, dukungan untuk perawatan diri dan pelaku rawat, fasilitasi akses, dan tim pengelolaan kesehatan yang kompeten.

Kata kunci: perawatan transisi, penyakit kronis, penyakit jangka panjang, geriatri, masuk kembali ke rumah sakit.

Introduction

Indonesia has entered the era of an aging population with its increasing number of residents over 60 years old.¹ There are more than 9.6% of elderly aged 60 years older and over (from Susenas 2019) in Indonesia, and predicted to increase by about 25% in 2050 of the total population.² In the last decades, socio-demographic changes affected health care system in many countries.³⁻⁵ Those who are advanced in years are prone to developing various diseases. Many of whom need long-term care due to their chronic diseases.⁶ The hospital readmission rate and the morbidity rate of elderly people due to chronic diseases have also increased. This poses a big challenge to the world. Thus, there have been new efforts to shift the focus of health services through transitional care.⁷⁻⁹

The concept of transition care must arise in Indonesia because there is no integration of health care services to manage patient transfer between service providers. Transitional care is a care process after hospital discharge to their home or other care settings for long-term management.¹⁰ It is a comprehensive plan to ensure the coordination and continuity of health care. Transitional care involves the elements of primary care, coordination between services, discharge planning, case management, and patient and family education.⁷⁻⁹ This review aims to describe the impact of transitional care intervention (TCis) among elderly with chronic disease.

Methods

We use the PICO study to set the research question. This review included randomized controlled trials (RCT), systematic review, and meta-analysis studies with participants who were > 60 years old and diagnosed with chronic disease discharged from the ward. Articles were included if the study utilized TCis that started when participants were in the hospital and provided continuity of care after they were discharged to home. Comparison was standard care. Outcomes were events of hospital readmission, mortality, or unplanned emergency department visits. Studies were excluded if the intervention was compared to anything other than usual care, articles conducted more than ten years ago, and not published in English/Bahasa.

The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) were adopted

to specify the objectives and methods of this review.¹¹ Eligible studies were identified through bibliographic searching from PubMed, ScienceDirect, and Cochrane Databases from inception to June 2021. Keywords, MeSH, and synonyms of transitional care, geriatric, and chronic disease were used. The search was limited to studies published in English or Bahasa within the past ten years. One reviewer independently reviewed all titles and abstracts for relevance to defined eligibility criteria and removed the duplicates. Three reviewers independently assessed the full text. Disagreements were resolved through discussion.

Data from the eligible studies were extracted by 3 researchers independently. Extracted data included study characteristics and results such as author, year of publication, country, study design, intervention, study size, mean age, and outcomes. The methodology quality was assessed using the Oxford critical appraisal tools to determine the validity, importance, and applicability of the selected studies.¹² Quality assessment from all studies were analyzed, and the impact hereof were discussed.

Results

Study Selection and Characteristic

Articles identified from the literature search (107) were imported to Mendeley and six duplicates were removed. Eleven unique records remained after the title and abstract screening on defined eligibility criteria. After 3 reviewers independently assessed the full text based on the inclusion criteria, 4 unrelated studies were removed due to the participants age and not related to the PICO (Figure 1). Of the seven records remaining, 6 studies of RCTs and one study of systematic review (SR) as shown in Table 1.

The trials were conducted in the United States of America (n=3), Hong Kong (n=1), France (n=1), and Germany (n=1). The studies were published between 2011 to 2017. Outcome assessments were conducted from 1 to 12 months after discharge. The sample size ranged from 178 to 1009 from the 6 trials. Approximately 4417 patients' age were evaluated in the review. The mean age of the participants was approximately 76.3±5.8 years old in the intervention groups (IG) and 76.6±7.3 years old among the control groups (CG).

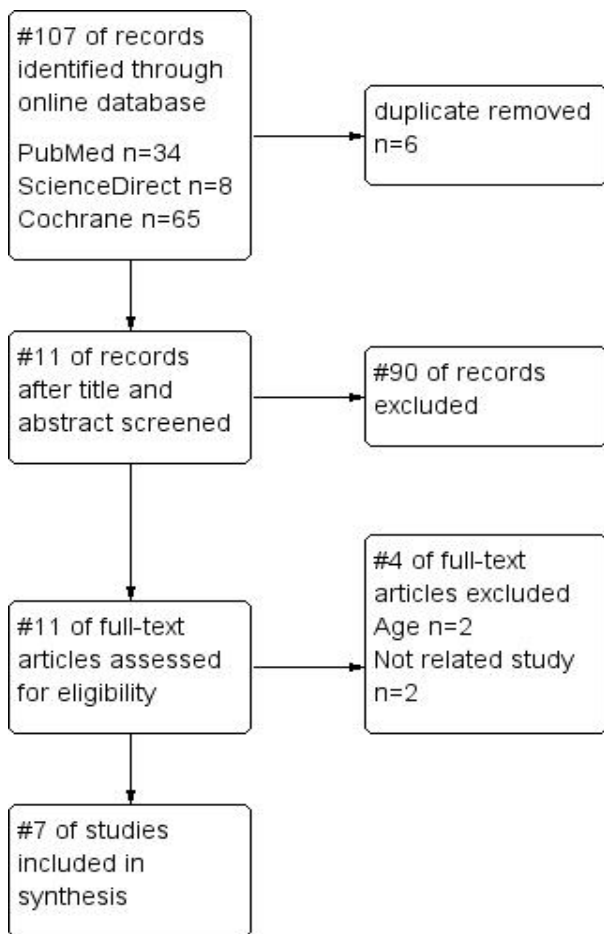


Figure 1. Flow Chart of Study Selection

Transitional Care Components

The care could be divided before hospital discharge, after discharge at home, and throughout the entire period or between health care services. The intervention varied widely. The intervention provided at the hospital included comprehensive geriatric assessment, discharge planning, involvement of caregivers, physical exercise, and patient education. The interventions provided at home were home visits, telephone follow-up, rehabilitation, family education, and community care support. The interventions provided throughout the entire period were written or handover between health care service or in-person, and multidisciplinary approach.

Effects of Transitional Care

The outcome's effects were measured at a different time in the included studies. The measurement time points were 1 month (n=3),¹³⁻¹⁵ 3 months (n= 2),^{16,17} 6 months (n=1),¹⁷ 9 months (n=1),¹⁸ and 12 months (n=1)¹⁹ post-discharge

from the wards. Outcomes were hospital readmission,^{13-15,17-19} mortality,¹⁶⁻¹⁹ ED visit,^{13,14,16,17} event-free survival,^{17,18} length of hospital stay,¹⁸ self-care,¹⁸ health-related quality of life (QOL),^{14,16,18} primary care services,¹³ and specialty physician service.¹³ Readmission was measured in most studies (n=7), followed by mortality (n=4), and ED visit (n=3).

A study by Legrain et al¹⁷ showed that participants in IG were statistically significant less likely to have returned to the hospital or ED at 3 months (23% vs 30.5%) but showed no non-significant effect on the outcome at 6 months (35.5% vs 40.8%). Boulton et al¹³ found statistically significant outcomes of reduction in episodes of home care at 1 month (OR 0.70; 95% CI: 0.53-0.93). In their other study, Boulton et al.¹⁴ found a lower mortality rate at 1 month (OR 0.88; 95% CI: 0.59-1.31). A study from Yu et al¹⁸ found that the IG had significantly lower mortality (4.1% vs 13.8%, p= 0,03) at 9 months and hospital readmissions during the first 6 weeks (8.1% vs 16.3%, p= 0,048). Balaban et al¹⁵ observed the older group (> 60 years old) experienced a statistically significant adjusted absolute 4.1% decrease (95 %CI: -8.0 %, -0.2 %) in readmission.

From Le Berre et al¹⁶, they obtained a significant lower risk of mortality at 3 months (RD -0.02; 95% CI: -0.05, 0.00), 6 months (RD -0.02; 95% CI: -0.03, -0.00), 12 months (RD -0.04; 95% CI: -0.06, -0.01), and at 18 months (RD -0.7; 95% CI: -0.12, -0.02). They also obtain a significantly lower risk of returned to ED at 3 months (RD -0.08, 95% CI: -0.15, -0.01). In addition, they reported lower rate of hospital readmission at 3 months (RD -0.08; 95% CI: -0.14, -0.03), 6 months (RD -0.05; 95% CI: -0.09, -0.00), 12 months (RD -0.11; 95% CI: -0.17, -0.05), and at 18 months after discharge (RD -0.11; 95% CI: -0.21, -0.01). Most studies showed a positive impact on readmission in the intervention groups. In contrast, one study from Meisinger et al¹⁹, presented no impact on hospital readmission or mortality (HR 1.01, 95% CI: 0.72,1.4) after 12 months post-discharge.

Quality Assessment

The quality was assessed using the Oxford critical appraisal tools for RCT and systematic review.¹² Most of the studies were similar at the start of the trial and had equal treatment and intention to treat. Blinding was conducted variably. Thus, we concluded that all the studies were valid for further review.

Table 1. Study Characteristics

Author	Country	Intervention	Study size	Mean age, years (SD)	Outcomes	Impact
Legrain et al ¹⁷	France	Optimization of Medication in AGEd (OMAGE) intervention (6-month follow-up) encompassed comprehensive assessment, self-management education, and care coordination.	I: 317 C: 48	I: 85.8 (6.0) C: 86.4 (6.3)	- Readmission and ED visit in 3 months - Readmission and ED visit in 6 months	RRR: 24.6%, 95% CI: 2.2–46.1% (p=0.03). RRR: 13.5%, 95% CI: -1.9 to 12.9% (p=0.15).
Boult et al ¹³	United States	Guided care (1-month follow-up) encompassed comprehensive assessment, care planning, monthly monitoring, coordination, self-management support, family and caregivers support, community services.	I: 446 C: 404	I: 77.1 (66-106) C: 77.8 (66-96)	- Reduction in the use of home care	OR: 0.70, 95% CI: 0.53-0.93 (p. S)
Boult et al ¹⁴	United States	Guided care (1-month follow-up) encompassed comprehensive assessment, care planning, monitoring, coordination, self-management support, family and caregivers support, community services.	I: 274 C: 203	I: 77.3 (NR) C: 77.9 (NR)	- Mortality in 1 month	OR: 0.88, 95% CI: 0.59–1.31 (p. NS)
Meisinger et al ²⁰	Germany	Transitional care (1-year follow-up) encompassed case management, nurse-based follow-up (including home visit and telephone calls), disease management.	I: 161 C: 168	I: 75.2 (6.0) C: 75.6 (6.0)	- Unplanned readmission to hospital or death in 12 months	HR: 1.01, 95% CI: 0.72–1.41 (p. NS)
Yu et al ¹⁸	Hong Kong	Transitional care (9-month follow-up) encompassed follow-up home visit, self-management support, and community service.	I: 90 C: 88	I: 78.6 (7.1) C: 78.7 (6.7)	- Mortality rates in 9 months (IG vs CG) - Hospital readmission rate at 6 weeks (IG vs CG)	4.1% vs 13.8%, p= 0,03 8.1% vs 16.3%, p=0.048
Balaban et al ¹⁵	United States	Transitional care (1-month follow-up) encompassed patient navigators (include hospital visits, weekly telephone calls), symptoms and medication management, care coordination	age > 60y I: 425 C: 584	I: 66.4 (15.5) C: 63.7 (16.7)	- Hospital readmission in 1 months	4.1% decrease, 95%CI: -8.0%-0.2%
Le Berre et al ¹⁶	-	Transitional care (1-month follow up) encompassed discharge planning, follow up (include home visit and phone call), education, care coordination.	NR	I: 73.8 (4.8) C:NR	- Lower mortality at 3 months post-discharged - Lower mortality at 6 months post-discharged - Lower mortality at 12 months post-discharged - Lower mortality at 18 months post-discharged - Lower rate of ED visits at 3 months post-discharged - Lower rate of readmissions at 3 months post-discharged - Lower rate of readmissions at 6 months post-discharged - Lower rate of readmissions at 12 months post-discharged - Lower rate of readmissions at 18 months post-discharged	RD: -0.02 [-0.05, 0.00] RD: -0.02 [-0.03, -0.00] RD: -0.04 [-0.06, -0.01] RD: -0.07 [-0.12, -0.02] RD: -0.08 [-0.15, -0.01] RD: -0.08 [-0.14, -0.03] RD: -0.05 [-0.09, -0.00] RD: -0.11 [-0.17, -0.05] RD: -0.11 [-0.21, -0.01]

I: Intervention; C: Control; SD: standard deviation; ED: emergency department; NR: not reported; RRR: relative risk reduction; HR: hazard ratio; OR: odds ratio; CI: confidence interval; RD: Risk Difference; NS: non-significant.

The Domain of Transitional Care

The studies found that most TCIs aim to reduce readmission, mortality, and ED visit rates among the elderly. Five domains of transitional care were derived from the examined studies and were grouped into comprehensive assessment, planning and communication, support for self-care and caregiver, access to the facilitation, and competent healthcare team. The domain works well with enablers such as detailed components of TCIs, integration with patients’ insurance and program evaluation, implementation in specific populations with treatment based on operating procedure guide developed by multi-disciplinary team, and use of standardized scripts.^{13-15,17-18,20}

Barriers of Transitional Care

There were also barriers to transitional care, such as unstructured discharge planning, follow-up, and guided care; heterogeneity of implementation; lack of infrastructure; minimum participation of the multidisciplinary health team; and the fact that the patient navigators were not medically licensed (Table 2.) Therefore, there is a need for physicians with competence to conduct transitional care as patient navigators as a way of bridging health facilities to lower the risk of hospital readmission and the mortality rate, especially in elderly people with chronic diseases.

Table 2. Barriers to Transitional Care

Study	Barriers
Legrain et al ¹⁷ (RCT)	Not focusing on post-discharge follow-ups (e.g., home visits, phone calls)
Boult et al ¹³ (RCT)	Non-evaluation of the effect of guided care on patients’ medication use
Boult et al ¹⁴ (RCT)	Heterogeneity in model implementation by individual nurses
Meisinger et al ²⁰ (RCT)	Hospital readmissions determined based on patient self-reports (may be biased)
	Yu et al ¹⁸ (RCT) Lack of infrastructure and physician participation to support integrated multidisciplinary team-based practice across different care setting levels.
Balaban et al ¹⁵ (RCT)	Patient navigators not medically licensed but trained to provide transitional care.

RCT: Randomized Controlled Trial

Discussion

Variation of Transitional Care

The term used for transitional care varied across studies. Legrain et al¹⁷ used the term “multimodal geriatric discharge-planning intervention” for the comprehensive discharge planning for elderly people. Boult et al^{13,14} used the term “guided care” for comprehensive care planning, monthly monitoring of symptoms, and home care. Balaban et al¹⁵ used the term “patient navigator” as a navigator for the patient’s transfer process from the hospital to home, weekly post-discharge calls, and outpatient visit appointments. Yu et al¹⁸ in their study involving patients with chronic heart failure (CHF), used the term “transitional care” for pre-discharge visits, two weekly home visits after discharge, intensive telephone follow-up, and telephone access to cardiac nurses. Meisinger et al¹⁹ used the term “nurse-based case management” for nurse-based follow-up for 1 year, including home visits and telephone calls.

In the systematic review by Le Berre et al¹⁶ they mentioned that home visits, tele-monitoring, and initial contact within 1 week from hospital discharge did not lead to better results. The subgroup interventions that led to better results were phone

calls, phone availability (24/7), and the involvement of a pharmacist. Legrain et al¹⁷ focused on discharge planning on preparing the patient for discharge but paid less attention to implementing post-discharge follow-up (home visits or telephone contacts). This study showed a reduction in emergency hospital readmissions at 3 months but not at 6 months. The event-free survival curves were still higher in the IG at 6 months, but the difference was insignificant. This might have been due to the unfocused post-discharge follow-up. On the other hand, Balaban et al¹⁵ used comprehensive discharge-planning methods and weekly telephone outreach for 30 days post-discharge. They found a statistically significant adjusted absolute decrease in readmissions with an increase in 30-day outpatient follow-up for patients older than 60 years old.

Boult et al¹³ conducted monthly care evaluation of patients for 20 months and found a reduction in home health care episodes. The study by Yu et al¹⁸ found a significantly lower mortality rate and significantly better self-care compared to the control group at the end of the intervention (at 9 months) after pre-discharge visits, home visits, and intensive telephone calls were used. Le Berre et al.¹⁶ stated that a significant mortality risk difference

occurred in the transitional-care group from the follow-up at 3 months until 1 year, and not in the first 1 month. Balaban et al¹⁵ in their intensive follow-up study, found a significant decrease in hospital readmission rate in a 1-month intervention.

The single-centre-design study by Meisinger et al¹⁹ did not find any significant benefit of transitional care by trained nurses compared to the usual care in terms of the hospital readmission rate of elderly people with myocardial infarction following home visits and telephone calls. This could be because the usual care in such study was already close to optimal. Besides, the hospital readmission rate could have increased because of the improved communication between the health care provider and the patient, which facilitated the management of undiagnosed medical conditions, and because the patients had a better understanding of their symptoms and sought medical care when they perceived these.

Regarding age, the applicability of transitional care in older people and young people is different. Balaban et al¹⁵ found that the patient navigators were more successful in contacting older patients (> 60 years old) than in younger patients. The care delivery methods should be adjusted based on the patient's age to fulfil the needs of every age segment. In addition, the applicability of transitional care should be linked with the background of each setting, such as the cultural beliefs of each population. Yu et al¹⁸ stated that the effects of cultural beliefs and practices on self-care were found to be effective in China. Boulton et al¹³ stated, that guided care given to patients insured by and who receive primary care from a particular insurance company with an interoperable electronic medical record system and a culture that promotes, and rewards team care, prevention, and avoidance of unnecessary care will effectively reduce the use of skilled- nursing facilities.

Effective Components of Transitional Care

Most of the studies were concerned about the effects of transitional care on mortality, hospital readmission, and emergency visit rates post-discharge. A narrative synthesis of the selected studies was done by Popay et al²⁰ to determine the factors that need to be addressed to prevent readmissions. The risk factors of preventable readmissions were clearly stated in the study by Legrain et al¹⁷ and implied in all other selected studies. The factors are drug-related problems (DRPs; iatrogenic illness, adherence problems, and

undertreatment), underdiagnosed and undertreated depression, protein-energy malnutrition, lack of patient education, and insufficient coordination between health professionals. Primary care or family physicians have a role in managing these factors and making them part of transitional care so that integrative and collaborative care can be provided. The effective components of transitional care are stated below.

Management of Communication and Coordination

Communication and coordination are essential to good transitional care. All diseases and problems must be communicated to the healthcare workers so that they can perform optimal work and the patient can receive optimal services. The health problems and the links between them should be assessed. Undertreatment should be identified and addressed. All the prescriptions should be evaluated. Legrain et al¹⁷ communicated with the usual prescriber via telephone calls. The recommendations by discharge-planning geriatricians were delivered to the usual geriatricians in charge of the patient's care. The usual geriatricians made the final decision. The patient's usual doctors were contacted if hospital readmissions happened. The discharge-planning geriatricians only wrote a brief report about the patient's drug changes and essential follow-up criteria. The usual and discharge-planning geriatricians discussed all the treatment changes to ensure no contradictory advice was given.

Management of Drug-Related Problems

Legrain et al¹⁷ stated that discharge-planning geriatricians target chronic treatment post-hospitalization. All the medications (including over-the-counter medicines) were conciliated. The patients and caregivers were asked about their drug-related problems, such as adherence and iatrogenic illnesses that could interfere with correct drug use. The problems were assessed, and solutions were offered. The patients and caregivers were told to detect the personal "red flags", and the situations that pose a risk of developing drug-related problems that threaten their effective management.

Management of Depression

Legrain et al¹⁷ performed screening for major depression using the Geriatric Depression Scale, and if the result was positive, they consulted the Diagnostic and Statistical Manual of Mental Disorders. The therapeutic modalities

implemented involved not only the administration of antidepressants but also psychotherapy and environmental actions.

Management of Malnutrition

Lack of sufficient energy causes inadequate dietary intake and can lead to hospital readmission. Legrain et al¹⁷ considered 5% or more significant weight loss in the last month or 10% or more significant weight loss in the last 6 months, 21 kg/m² or less body mass index, and a lower than 35 g/l serum albumin level as indicating protein-energy malnutrition. The interventions employed included nutritional supplies, minimizing dietary restrictions, and enhancing energy intake. Meisinger et al¹⁹ also gave nutrition recommendations orally and in writing.

Comprehensive Assessment

A comprehensive assessment should be done for geriatric patients with chronic diseases. The assessments could be included in discharge planning, as in the study by Legrain et al¹⁷, or at home, as in the 2011 and 2013 studies by Boulton et al^{13,14}. Balaban et al¹⁵ reported that their patient navigators communicated with the inpatient provider to assess the patient's post-discharge needs and concerns.

Transitional Care Planning and Communication

Boulton et al¹³ created an evidence-based care guide, and a patient-friendly version called an action plan. Balaban et al¹⁵ reported that their patient navigators verified the patient's post-discharge contact information and confirmed their convenient times for outreach. Furthermore, Meisinger et al¹⁹ gave information about the disease, medication, and behavioral recommendations orally and in writing (the so-called heart book).

Support for Self-Care and The Caregiver

Legrain et al¹⁰ stated that healthcare workers should increase the patient's ability to manage their follow-up better. The patient and caregiver received education aimed at making them active care partners. Their health priorities (values, treatment burdens, and preferences) were also assessed. Boulton et al¹³ used motivational interviews to promote patient self-management.

Access Facilitation

Boulton et al¹³ stated, that geriatric patients' access to community services should be enhanced. The program should smoothen the patient's transition

between care sites and should coordinate the efforts of all the patient providers. Balaban et al¹⁵ reported that their patient navigators informed the primary care providers of a patient's hospital discharge and wrote a summary of each completed call, which was sent to the patient's primary care nursing staff. They also established connections with the community service providers and assisted with transportation and health insurance issues. The facility could be modified for specific populations based on the patient's needs. Meisinger et al¹⁹ in their study on patients with acute myocardial infarction, also helped the patient communicate with the cardiac sports group, but did not integrate the follow-up data with the hospital's medical records. Therefore, the hospital readmissions were determined based on the patient self-reports and may thus be biased.

Competent Healthcare Team

In their study, Legrain et al¹⁰ gave geriatricians with a minimum of 3 years of experience a central role in transitional care. The geriatricians took part in the conception of intervention. They received specific patient education training and reviewed the literature on depression, malnutrition, and other undertreatment situations, such as atrial fibrillation, coronary artery disease, and osteoporotic fracture. They communicated with other healthcare workers, such as specialists and general practitioners so that the intervention would be comprehensive and holistic. Boulton et al^{13,14} recruited registered nurses who had completed a course in guided care nursing to work in partnership with patients' primary care physicians. In their study, they reported that the registered nurses also received feedback on their performance in the monthly meetings with the research team.¹⁴ The physicians within the team were either board-certified general internists or family physicians.

Meisinger et al¹⁹ stated that their nurses received training on assessments and interventions from the study physicians and principal investigators. The treatments were based on a standard operational procedure guide developed by a multidisciplinary team. In their study, Yu et al¹⁸ involved cardiac nurses with a minimum of 10 years' experience in cardiac care for patients with chronic heart failure. However, they lacked the infrastructure and participation of physicians to support the integrated multidisciplinary-team-based practice across different care setting levels.

In the systematic review by Le Berre et al¹⁶ the subgroup analysis for nurse-led interventions did not yield better results than the usual care. On the

contrary, Boulton et al. involved registered nurses in their 2011¹³ and 2013¹⁴ studies and obtained good outcomes. As for Balaban et al.¹⁵ even though they did not involve medically licensed workers in their study as patient navigators, they trained the latter to provide high-quality care. Therefore, based on the foregoing, we concluded that if the workers are trained and supervised regularly, the outcome could be good.

Transitional Care in Indonesia

There has not been any guide for transitional care in Indonesia. From our interview by sending questionnaires to multiple elderly individuals, we discovered they have never obtained TCis. After receiving hospital care, they also report a need for TCis such as family assessment, telemedicine, an oral/written handover between healthcare providers, physical activity monitoring, nutritional assessment, community assistance, and home care. In addition, they said that they are willing to pay for treatments on their own if these interventions are necessary to improve their quality of life. A further survey with more participants is needed to represent the group.

We only found a few studies on transitional care in Indonesia.^{6,21,22} Mostly home-care service was provided independently by primary care services, government, or social organizations, which is not included in the transitional care system.^{6,22} In a preliminary study, Siallagan et al²¹ observed the implementation of transitional care in Indonesia. They created forum group discussions and questionnaires for healthcare professionals and patients. They found that 58.82% of the nurses have an advanced perception of transitional care, 11,76% have a good perception, and 29.42% lack knowledge. They also set a model of transitional care as 1) screening; 2) staffing; 3) maintaining relationships; 4) engaging patients and family caregivers; 5) risk management; 6) self-management; 7) collaboration; 8) promoting continuity; and 9) fostering coordination.²¹

Transitional Care Around the World

The elderly are the most frequent users of healthcare services worldwide;²³ thus, they have a high possibility of experiencing various transitional care intervention.²⁴ In Canada, Weeks et al²⁵ discovered that patient-centered care, collaboration between healthcare professionals, and integrated healthcare services across sectors are important factors in ensuring that elderly people receive the necessary support as they transition between different healthcare settings, especially from

hospital to home. In most European nations, primary care plays a role in coordinating care services. In some European nations, families are less likely to care for the elderly; hence facility-based transitional care is crucial.²⁶ Conditions differed from those in the Mediterranean and southern regions of the continent, when family-based elder care was the norm. Medicare, the primary health insurer for the aged in the United States, uses value-based care claims and penalizes hospitals with high 30-day readmission rates, because well-planned transitional care for the elderly has a significant impact on reducing long-term costs.²⁷

Appropriate transitional care services for elderly people by primary care and hospitals should be done correctly.²⁴ Family medicine has a role in the continuity of patient care. Family medicine is integrated into primary care to perform transitional care with various structure worldwide.²⁸ Family medicine is an example of the role of a family physician to maintain continuity of care as well as their role as a care coordinator. Therefore, transitional care training and learning material must be part of the family medicine residency program. Physicians with excellent training and abilities in the structured curricula below are needed for such communication and working in a multi-disciplinary environment; Training patients and families in self-care to maintain the stability of the patient's and family's health; Knowledge of community and social services according to the patient's needs; Effective application of clinical knowledge and skills; Ability to develop effective management plans according to service needs; also Introspective skill regarding various limitations, including those of other stakeholders.

Conclusion

TCis for geriatrics with chronic disease is beneficial in reducing hospital readmission rates, mortality, and emergency department visits. Five domains should be addressed for effective transitional care: comprehensive assessment, planning and communication, support for self-care and the caregiver, access facilitation, and a competent healthcare team. TCis design should be evaluated among the diverse population to identify which interventions work or do not. Future research is needed to investigate the effect of TCis in Indonesia on a larger population and its cost-effectiveness. Implementing transitional care in Indonesia is needed to improve the sustainability of long-term management.

References

1. TNP2K. The situation of the elderly in Indonesia and access to social protection programs: secondary data analysis [Internet]. 2020. [cited 2022 Aug]. Available from <https://www.tnp2k.go.id/download/83338Elderly%20Study%20-%20Secondary%20Data%20Analysis.pdf>
2. Badan Pusat Statistik. National Socioeconomic Survey: Statistics of Elderly Citizens 2019 [Internet]. 2019. [cited 2022 Aug]. Available from <https://www.bps.go.id/publication/2019/12/20/ab17e75dbe630e05110ae53b/statistik-penduduk-lanjut-usia-2019.html>.
3. World Health Organization. Ageing and health [Internet]. 2021. [cited 2022 Aug]. Available from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health#:~:text=Key%20facts,%2D%20and%20middle%2Dincome%20countries.>
4. World Health Organization. Regional Office for Europe. Home care across Europe: current structure and future challenges. European observatory on health systems and policies [Internet]. 2013. [cited 2022 Aug]. Available from <https://apps.who.int/iris/bitstream/handle/10665/327948/9789289002882-eng.pdf?sequence=1&isAllowed=y>
5. Braun KL, Conybeare C. Active aging in Asia: community care policies and programs in Hong Kong, Japan, Korea, and Singapore. *Innov Aging*. 2017;1(s1):685. doi:10.1093/geroni/igx004.2447
6. Kausari LIE, Sukihananto. Utilization of internet-based information technology on the development of home care in Indonesia. *Dinamika Kesehatan: Jurnal Kebidanan dan Keperawatan*. 2019;10:213-21. doi:10.33859/dksm.v10i1.331
7. Lee KH. Transitional care: origins, concept, and practice. *Singapore Fam Physician*. 2015;41:5-10. https://www.cfps.org.sg/publications/the-singapore-family-physician/article/903_pdf
8. Low LL, Vasawala FF, Ng LB, Chen C, Lee KH, Tan SY. Effectiveness of a transitional home care program in reducing acute hospital utilization: a quasi-experimental study. *BMC Health Serv Res*. 2015;15:100. doi: 10.1186/s12913-015-0750-2
9. Puvanendran R, Fakhruddin VF, Kamei RK, Hock LK, Lie DA. What do medical students learn when they follow patients from hospital to community? A longitudinal qualitative study. *Med Educ Online*. 2012;17:18899. doi: 10.3402/meo.v17i0.18899
10. Shahsavari H, Zarei M, Aliheydari MJ. Transitional care: Concept analysis using Rodgers' evolutionary approach. *Int J Nurs Stud*. 2019;99:103387. doi: 10.1016/j.ijnurstu.2019.103387
11. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71. doi: 10.1136/bmj.n71
12. CEBM. Critical appraisal tools [Internet]. 2010. [cited 2022 Aug]. Available from <https://www.cebm.ox.ac.uk/resources/ebm-tools/critical-appraisal-tools>.
13. Boulton C, Reider L, Leff B, Frick KD, Boyd CM, Wolff JL, et al. The effect of guided care teams on the use of health services: results from a cluster-randomized controlled trial. *Arch Intern Med*. 2011;171:460. doi: 10.1001/archinternmed.2010.540
14. Boulton C, Leff B, Boyd CM, Wolff JL, Marsteller JA, Frick KD, et al. A matched-pair cluster-randomized trial of guided care for high-risk older patients. *J Gen Intern Med*. 2013;28:612-21. DOI: 10.1007/s11606-012-2287-y
15. Balaban RB, Galbraith AA, Burns ME, Vialle-Valentin CE, Larochelle MR, Ross-Degnan D. A patient navigator intervention to reduce hospital readmissions among high-risk safety-net patients: a randomized controlled trial. *J Gen Intern Med*. 2015;30:907-15. doi: 10.1007/s11606-015-3185-x
16. Le Berre M, Maimon G, Sourial N, Guériton M, Vedel I. Impact of transitional care services for chronically ill older patients: a systematic evidence review. *J Am Geriatr Soc*. 2017;65:1597-608. doi: 10.1111/jgs.14828
17. Legrain S, Tubach F, Bonnet-Zamponi D, Lemaire A, Aquino JP, Paillaud E, et al. A new multimodal geriatric discharge-planning intervention to prevent emergency visits and rehospitalizations of older adults: The optimization of medication in aged multicenter randomized controlled trial. *J Am Geriatr Soc*. 2011;59:2017-28. doi: 10.1111/j.1532-5415.2011.03628.x
18. Yu DS, Lee DT, Stewart S, Thompson DR, Choi KC, Yu CM. Effect of nurse-implemented transitional care for Chinese individuals with chronic heart failure in Hong Kong: a randomized controlled trial. *J Am Geriatr Soc*. 2015;63:1583-93. doi: 10.1111/jgs.13533
19. Meisinger C, Stollenwerk B, Kirchberger I, Seidl H, Wende R, Kuch B, et al. Effects of a nurse-based case management compared to usual care among aged patients with myocardial infarction: results from the randomized controlled KORINNA study. *BMC Geriatr*. 2013;13:115. doi: 10.1186/1471-2318-13-115
20. Popay J, Roberts H, Sowden A, Petticrew M, Arai L, Rodgers M. Guidance on the conduct of narrative synthesis in systematic reviews: a product from the ESRC Methods Programme Peninsula Medical School, Universities of Exeter and Plymouth [Internet]. 2006. [cited 2022 Aug]. Available from <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.178.3100&rep=rep1&type=pdf>.
21. Siallagan A, Suza DE, Ariani Y. Transitional care in heart failure patients in hospitals in Medan City: preliminary study. *Talenta Conference Series: Tropical Medicine (TM)*. 2018;Volume 1 Issue 2:381-6. doi: 10.32734/tm.v1i2.220
22. Kadar KS, Ardillah F, Puspitha A, Erfina E. Implementation of Home Care Services by Community Health Centers (Puskesmas) in Makassar City, Indonesia. *Jurnal Keperawatan Indonesia*. 2022;25(1):32-41. doi:10.7454/jki.v25i1.1695

23. GBD 2019 Diseases and Injuries Collaborators. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet*. 2020;396:1204-22. doi:10.1016/S0140-6736(20)30925-9
24. World Health Organization. Transitions of care: technical series on safer primary care [Internet]. 2016. [cited 2022 Aug]. Available from <https://apps.who.int/iris/bitstream/handle/10665/252272/9789241511599-eng.pdf>
25. Weeks LE, Macdonald M, Martin-Misener R, Helwig M, Bishop A, Iduye DF, et al. The impact of transitional care programs on health services utilization in community-dwelling older adults. *JBIS Database System Rev Implement Rep*. 2018;16:345-84. doi: 10.11124/JBISRIR-2017-003486
26. Damiani G, Farelli V, Anselmi A, Sicuro L, Solipaca A, Burgio A, et al. Patterns of Long Term Care in 29 European countries: evidence from an exploratory study. *BMC Health Serv Res*. 2011;11:316. <http://www.biomedcentral.com/1741-7015/9/124>
27. Reyes B, Ouslander JG. Care transitions programs for older adults—a worldwide need. *Eur Geriatr Med*. 2019;10:387-93. doi: 10.1007/s41999-019-00173-5
28. Arya N, Gibson C, Ponka D, Haq C, Hansel S, Dahlman B, et al. Family medicine around the world: overview by region: The besrou papers: a series on the state of family medicine in the world. *Can Fam Physician*. 2017;63:436-41. PMID: PMC5471080