

# Transitional palliative care interventions for older adults with advanced non-malignant diseases and frailty: a systematic review

Transitional  
palliative care  
interventions

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## Abstract

**Purpose** – To identify transitional palliative care (TPC) interventions for older adults with non-malignant chronic diseases and complex conditions.

**Design/methodology/approach** – A systematic review of the literature was conducted. CINAHL, Cochrane Library, Embase and Pubmed databases were searched for studies reporting TPC interventions for older adults, published between 2002 and 2019. The Crowe Critical Appraisal Tool was used for quality appraisal.

**Findings** – A total of six studies were included. Outcomes related to TPC interventions were grouped into three categories: healthcare system-related outcomes (rehospitalisation, length of stay [LOS] and emergency department [ED] visits), patient-related outcomes and family/carer important outcomes. Overall, TPC interventions were associated with lower readmission rates and LOS, improved quality of life and better decision-making concerning hospice care among families. Outcomes for ED visits were unclear.

**Research limitations/implications** – Positive outcomes related to healthcare services (including readmissions and LOS), patients (quality of life) and families (decision-making) were reported. However, the number of studies supporting the evidence were limited.

**Originality/value** – Studies examining the effectiveness of existing care models to support transitions for those in need of palliative care are limited. This systematic literature review identified and appraised interventions aimed at improving transitions to palliative care in older adults with advanced non-malignant diseases or frailty.

**Keywords** Palliative care, End-of-life care, Transitional care, Older adults, Advanced disease, Non-malignant, Chronic disease, Frailty, Care models

**Paper type** Literature review

## Introduction

According to the World Health Organisation (WHO) (Sepúlveda *et al.*, 2002) and the Worldwide Palliative Care Alliance (Connor and Sepulveda Bermedo, 2018), palliative care is a holistic approach that involves patients and families who are living with life threatening illnesses, with the aim of improving quality of life, preventing and/or identifying pain and other problems at the earliest possible stage and providing effective management and support to relieve suffering. Despite its important role in the care of end-stage illnesses, both malignant and non-malignant diseases, many countries have been reluctant to invest in palliative care, favouring more curative interventions (Sepúlveda *et al.*, 2002). While the term “palliative care” is “embedded in emotions” (Broom *et al.*, 2013) and often perceived with an initial sense of shock and fear as well as a herald of imminent death (Ronaldson and Devery, 2001), many patients express their satisfaction with this approach to care, reporting a sense of comfort, peace and hope (Ronaldson and Devery, 2001). The literature supports this, showing that palliative care improves quality of life and quality of care while reducing healthcare costs (Carpenter, 2017). There is also evidence that multi-disciplinary palliative care support can reduce unnecessary admissions to hospital including those with non-malignant disease (Lorenz *et al.*, 2008).

Recognition of the need for palliation and end-of-life care can be challenging, particularly among older adults and those with advanced (non-malignant) chronic diseases and syndromes such as frailty (Gott *et al.*, 2011; Peel *et al.*, 2013; Loeffler, 2016; Allen *et al.*, 2014). Frailty has strong psychological impacts including a significant overlap with depression (Mezuk *et al.*, 2013) as well as a significant risk of reduced quality of life (Kojima *et al.*, 2016). Palliative care can be highly appropriate to alleviate discomfort and to improve quality of life for frail older adults (Boockvar and Meier, 2006).

Despite the benefits of palliative care, the smooth transition between curative and symptomatic care is challenged by medical factors, patient and family factors and system factors (Thompson *et al.*, 2006). The boundaries between curative, palliative and terminal phases of disease can be blurred (Jeffrey, 1995). Trajectories may be an important factor with very different survival trajectories between cancer, organ failure and the less predictable decline associated with frailty or dementia (Murray *et al.*, 2005). Notably, the majority of care transitions are unplanned due to sudden changes and decompensation in both acute and chronic diseases (Coleman *et al.*, 2005). Advanced care planning, good communication and

easy access to information are essential to provide a robust palliative approach during care transitions (Gott *et al.*, 2011; Healthcare Improvement Scotland, 2019). Thus, the effectiveness of a palliative approach is largely dependent on quality of care and also on the quality of transitions in care (National Consensus Project for Quality Palliative Care, 2004). Hence, any palliative approach to health needs to be operationalised through a meaningful integration with other systems and models of care (Sawatzky *et al.*, 2016).

Transitional care includes a wide range of services that are time-limited but play an important role in supporting patients as they facilitate the smooth transition of care from one healthcare setting to another (Sezgin *et al.*, 2020; Wong *et al.*, 2016). These services are delivered by interdisciplinary teams and aim to provide proactive support, integration and continuity of care between different settings and levels of care (Wong *et al.*, 2016). There is evidence that transitional care services improve quality of life (Wee *et al.*, 2014) and satisfaction with care (Hernandez *et al.*, 2018) as well as reducing hospitalisation rates (Wee *et al.*, 2014; Lowthian, 2017; Naylor, 2006) and healthcare costs (Naylor *et al.*, 2013). Examples of transitional care models include, but are not limited to, pre-discharge assessments and post-discharge follow-up, guidance and counselling programmes delivered via telephone calls or home visits (Harbor Light Hospice, 2017; Wee *et al.*, 2014; Allen *et al.*, 2014).

Transitional palliative care (TPC) models specifically support the transition from treatment-focused “curative” activities to palliative services (Butcon and Chan, 2017). Individualised care is central to good TPC (Butcon and Chan, 2017; Doug *et al.*, 2011) with most models focusing on providing support to patients and their families considering their individual needs and priorities (Boyd and Murray, 2010). As with transitional care, there is evidence that TPC improves quality of life and the level of satisfaction with care (Levine, 2015; Butcon and Chan, 2017; Gott *et al.*, 2011). While several approaches are recognised (Schofield *et al.*, 2006), no specific models of TPC are recommended. A previous scoping literature review found that the main problems with transitions to palliative care are the nature of the transition itself, the timing of the transition and a lack of information or understanding around this (Marsella, 2009). Furthermore, disruptions to palliative care during hospital discharge may negatively impact communication, and coordination of care, with worsening of symptoms (Carpenter, 2017).

To date, few studies have examined whether models exist to support transitions for those in need of palliative care and it is unclear if these are effective in improving outcomes for patients or their families. Therefore, there is need to identify which individualised TPC models are most effective in managing symptoms and alleviating suffering in this particular population, those with advanced non-malignant chronic diseases, including those who are frail. In order to investigate this, we conducted a systematic literature review aimed at identifying and appraising interventions that improve transitions to palliative care in older adults with advanced non-malignant diseases or frailty.

## Methods

### *Data sources and search strategy*

The search was conducted in Pubmed, CINAHL, Embase and Cochrane Library using the search string: (“palliative care”) AND (“intermediate care” OR “transitional care”) AND (frailty OR frail OR “older person\*” OR “older adult\*” OR “hospital at home” OR “reablement” OR “independ\*” OR “readmission” OR “prolonged stay” OR “community hospital”).

### *Eligibility*

To be included in this systematic review, all studies had to fulfil all of the following criteria: (1) studies which employed TPC as an intervention, (2) inclusion of adults aged 65 years and over, as a widely used chronological definition of older people in many countries (World Health Organisation, n.d.), (3) inclusion of adults with advanced non-malignant chronic

diseases including frailty, (4) published between 01.01.2002 and 01.12.2019, (5) published in English and (6) had full text available. Studies that did not meet the inclusion criteria were excluded.

### *Screening and data extraction*

The screening and data extraction were performed by two reviewers (DS and MOD). Any conflicts occurring between the reviewers were resolved by involvement of a third independent reviewer (ROC). A standard template was used for data extraction. The template included author name, title, year, aim, setting, summary of intervention, characteristics of sample and organisational structure for delivering the intervention, use of technology, outcomes, transferrable lessons, and limitations. Quality appraisal of included studies were performed using the Crowe Critical Appraisal Tool (CCAT), a scale with appraisal scores ranging between 0 and 40 (Crowe, 2013).

## **Results**

The search yielded 144 records. After removal of duplications, title and abstract screening was performed for 127 studies. Thirty studies were eligible for full-text screening. However, six of them met the inclusion criteria. Results of the critical appraisal are presented in Table A1. Additional details of the screening process with the reasons why papers were excluded are summarised in Figure 1 (flow diagram). The quality appraisal scores of the included studies ranged between 20 and 39 (50–98%).

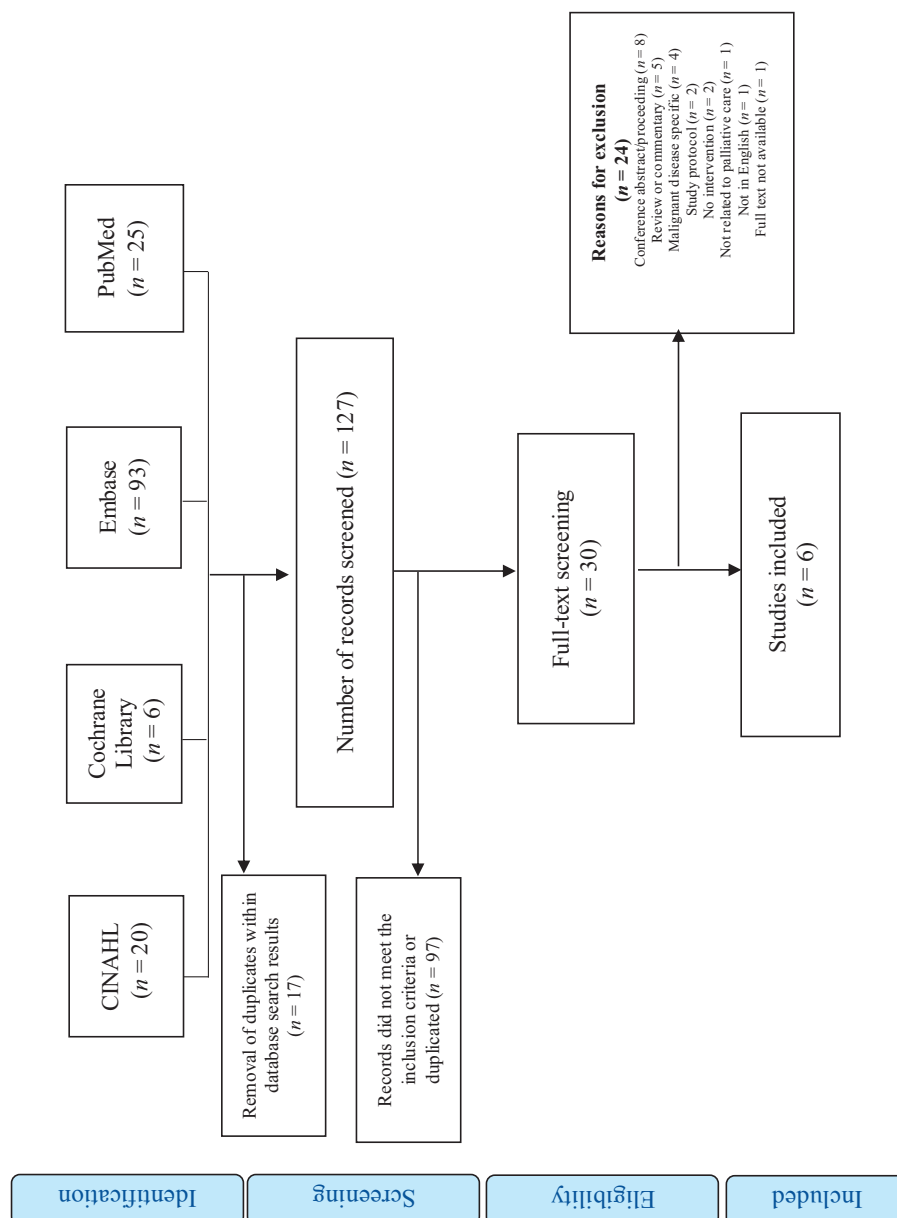
Most included studies were conducted in the USA ( $n = 4$ ), with one in the UK and one conducted in Hong Kong. Overall, the total sample size from the included studies was 41,353 with the mean age of participants ranging between 69 and 83.9 (available for three studies). All transitional care interventions were delivered by interdisciplinary teams. Five studies employed technology-assisted interventions, including electronic health records ( $n = 3$ ) and telephone calls ( $n = 3$ ). Four studies implemented pre and post discharge transitional care, while two studies delivered post-discharge follow-up with home visits. Characteristics of the included studies are summarised in Table 1. The studies were categorised according to whether they targeted outcomes related to healthcare systems, patients or families.

### *Healthcare system related outcomes*

All included studies investigated outcomes related to readmissions, hospitalisations and emergency department (ED) attendances.

#### *Readmissions ( $n = 4$ )*

Most of the studies reported significant decreases in readmissions. A transitional care program to enhance communication between care settings for nursing home residents with complex care needs (including frail older adults), decreased rehospitalisation rates from 15.2% to 13.9% and increased rates of residents receiving in-house palliative care from 18 to 27% (Giuffrida, 2015). Similarly, Baxter *et al.* (2018) delivered TPC to improve communication between service providers and reduced readmission rates from 22% to 16% for all palliative care patients and from 26% to 10% for patients discharged to partner facilities. Tusso *et al.* (2013) provided palliative care in their additional care bundles for Medicare general high-risk patients and decreased 30-day readmission rates from 12.8% to 11%. A randomised controlled trial (RCT) by Wong *et al.* (2016) implemented a TPC programme for end-stage heart failure patients including multidisciplinary case management, case discussions and follow-up. While their intervention reduced rehospitalisation rates at 12 weeks (33.6% in intervention group vs 61% in control group), this outcome was insignificant at 4 weeks post-discharge.



**Figure 1.**  
Flow diagram  
summarising the  
screening process

**Table 1.**  
Summary  
characteristics of  
included studies (*n* = 6)

Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
<i>Morrison et al., Reducing Preventable Hospitalizations with Two Models of Transitional Care (2016), USA Retrospective cohort (pre-post single-patient design without controls)</i>	<i>To compare the number of ED visits and hospitalizations in the 120 days before and after the intervention for patients enrolled two different transitional care programs</i>	Clinical nurse specialist (CNS) led intervention included 98 patients The PPC intervention included 40 patients	Condition: General Mean age: 69 for the CNS-led intervention 81 for the PPC intervention	Rural community hospital- department (ED)	CNS led and physician led assessment and interventions including post- hospitalization home visits	Electronic health records	CNS led interventions: reduced ED visits and hospitalizations in the four months post-intervention PPC (physicians specializing in palliative care) intervention: non- significant reduction in ED visits and a significant reduction in hospitalizations post-intervention	The absence of control groups The PPC program patients with complex conditions may have been declining more rapidly

(continued)

Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
Baxter <i>et al.</i> , Providing palliative care across the continuum to reduce readmissions from community settings, 2018, UK, Prospective patient tracking	To improve transitions of care and reducing hospital readmissions for inpatient palliative care consult at one hospital	896 patients	Condition: General Mean age: NA	Hospital and nursing home	A transition team for enhancing communication between skilled nursing facilities and community providers	Electronic health records	Reduced readmission rates for all palliative care patients	One hospital, small number of patients. Other skilled nursing facilities could not adopt the intervention due to funding issues during transitions from a skilled services facility to a hospice

(continued)

Table 1.

Table 1.

Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
<i>Tuso et al., The Readmission Reduction Program of Kaiser Permanente Southern California— Knowledge Transfer and Performance Improvement (2013), USA, Retrospective study</i>	<i>To describe the award-winning Readmission Reduction Program of Kaiser Permanente Southern California</i>	Approximately 40,000 Medicare risk hospital discharges	Condition: General (Medicare risk patients) Mean age: NA	Hospital - first quarter of 2012 at 13 medical centres	Bundle elements for risk stratification, standardised discharge summary, medication reconciliation, follow-up, discharge instructions One of the additional two bundles was related to palliative care	Telephone calls	Reduced all-cause 30-day readmission rates	NA

(continued)



Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
Giuffrida <i>et al.</i> , Palliative Care in Your Nursing Home: Program Development and Innovation in Transitional Care (2015), USA, Pre-post intervention study	To implement a facility-wide palliative care transitions programme to improve communication among palliative care patients, families, and the interdisciplinary team regarding each patient's wishes and values, especially with regard to hospitalization	173 patients	Condition: Individuals with chronic and complex care needs who are vulnerable to experiencing poor quality of care during transitions between settings (including frail older adults) Mean age: NA	Skilled nursing and rehabilitation facility	The Transition Coach and receiving clinical team meeting prior to arrival in order to enhance communication Follow-up by transition coach with the resident and/or family within one-week post-admission Staff training for patients' individual needs and wishes, and family involvement, and emotional support Family empowerment	NA	Reduced re-hospitalization rate Increased in-house residents on the palliative care programme	NA

(continued)

Table 1.

Table 1.

Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
<i>Hanson et al., Triggered Palliative Care for Late-Stage Dementia: A Pilot Randomized Trial, 2019, USA, Pilot Randomised- controlled trial (RCT)</i>	<i>To test dementia- specific specialty palliative care triggered by hospitalization</i>	62 patients (30 in the intervention group and 32 in the control group)	Condition: Late stage dementia Mean age 83.9 (83 for the intervention group and 84.7 for the control group)	Hospital	Dementia-specific pre-discharge specialty palliative care consultation and post-discharge two-week transitional telephone support by a palliative care nurse practitioner	Electronic health records and telephone calls	No difference in hospital and ED visits Increase in addressing of palliative care domains and likelihood of receiving hospice Increased likelihood of families to discuss prognosis and goals of care as well as to make decisions to avoid rehospitalisation, and to have a MOST (Medical Orders for Scope of Treatment) at 60-day follow-up	Limited enrolment of dementia patients due to short hospital stays and caregiver stress. Need for extending the duration of specialty palliative beyond discharge

(continued)

Table 1.

Author, title, year, country, design	Aim	Sample size	Population (mean age, and condition)	Setting	Main components of the intervention	Use of technology	Key healthcare outcomes	Limitations to interventions
Wong <i>et al.</i> , Effects of a transitional palliative care model on patients with end-stage heart failure: a randomised controlled trial, 2016, Hong Kong, RCT	<i>To examine the effects of home-based palliative care for patients with end- stage heart failure (ESHF) after hospital discharge</i>	84 patients (41 in the intervention group and 43 in the control group)	Condition: Patients with end stage heart failure who had been discharged home from hospitals and referred for palliative service Mean age 78.3 (78.4 for the intervention group and 78.3 for the control group)	Hospital	Case management with periodic review (follow-up by weekly home visits/telephone calls in the first four weeks) Discussion of end- of-life issues Multidisciplinary approach (monthly follow- up provided by a nurse case manager supported by a multidisciplinary team) Staff development for communication, cardiovascular and PC Discussion of treatment preferences and Integrated model of care	Telephone calls	Reduced readmission rate at 12 weeks post- intervention Significant difference in the mean number of readmissions (between groups) No significant difference in readmissions (between groups) at four weeks Improvement in depression, dyspnoea and total Edmonton Symptom Assessment Score (ESAS) at four weeks Significant changes in quality of life	The loss of follow-up was high The sample size was relatively small The results may not be generalisable since study was only carried out in Hong Kong

*Length of stay (n = 1)*

Only one study reported outcomes related to length of hospital stay. [Morrison et al. \(2016\)](#) compared two interventions delivered by clinical nurse specialists (CNS) and physicians specialising in palliative care (PPC). Both interventions consisted of post-hospital discharge assessments and follow-up home visits. Although they had a slightly different focus (chronic disease and palliative care), both reduced inpatient stays from 1.03 to 0.21 and 0.72 to 0.34 days, respectively.

*ED visits (n = 2)*

The evidence for reductions in ED visits was unclear. As described above, [Morrison et al. \(2016\)](#) compared interventions administered by CNS and physicians. While the CNS-led intervention decreased the mean ED visits from 0.93 to 0.22, the PPC did not result in a significant reduction. Similarly, a recent pilot RCT implementing a pre and post-discharge specialist palliative care and follow-up intervention to hospitalised patients with late stage dementia did not find a significant difference in mean ED visits per 60 days (0.68 vs 0.53) ([Hanson et al., 2019](#)).

*Patient outcomes*

Only one study (a RCT) reported outcomes directly for patients. A TPC programme delivered by [Wong et al. \(2016\)](#) in Hong Kong provided monthly follow-ups by nurse case managers and overall adopted a multidisciplinary approach. The programme also implemented staff training for improving communication and supported discussions about treatment preferences and integrated care models. It demonstrated improvements in depression (45.9% vs 16.1%), dyspnoea (62.2% vs 29%), and Edmonton Symptom Assessment Score (73.0% vs 41.4%) in patients with end-stage heart failure at four weeks post-discharge. The programme also resulted in improvements in quality of life.

*Family outcomes*

A pilot RCT of pre-discharge dementia-specific palliative care delivered by specialists plus two-week post-discharge telephone support had positive family outcomes ([Hanson et al., 2019](#)). The programme increased their participation in discussions about prognosis and goals of care. Moreover, it supported them in making decisions to avoid hospitalisation and/or receive hospice care. This resulted in higher rates of hospice care received by the intervention group compared to the control group (25% vs 3%).

**Discussion**

Transitions are one of the key considerations in relation to palliative care and should not be understated ([Marsella, 2009](#); [Sawatzky et al., 2016](#); [Thompson et al., 2006](#)). Moreover, early and phased but structured transitions are essential for success implementing timely and appropriate palliative care ([Gardiner et al., 2011](#)), especially in older adults with chronic diseases and complex conditions. Transitional care is a key element of integrated care to prevent and manage frailty ([Hendry et al., 2018](#)).

This systematic review identified a diverse but limited number of TPC interventions for older adults with advanced non-malignant disease or frailty. These specifically targeted symptoms and investigated the impact on avoidable hospital admissions. The results suggest that TPC can reduce readmission rates to hospital, lower inpatient LOS, improve quality of life for patients and support healthcare providers and families with decision-making around the need and timing of palliative care. Despite the potential benefits, few studies were identified, highlighting the need for further studies of TPC.

Although studies reported an impact on healthcare utilisation including reduced LOS and readmission, there was insufficient evidence that TPC decreased ED attendances. Specifically, specialist-delivered pre and post-discharge assessments and follow-up interventions did not reduce the mean number of ED attendances (Morrison *et al.*, 2016; Hanson *et al.*, 2019). This may relate to the inability of TPC to address unexpected crisis, where urgent assessment in ED is appropriate. However, as only two studies assessed this outcome, there is a need for further research in this area. Similar to our findings, a recent systematic review by Saunders *et al.* (2019), examining adults with malignant or mixed malignant-non-malignant diseases and reporting outcomes of palliative care transitions from acute to community-based care including LOS, discharge support and hospital readmissions, concluded that the evidence for their effectiveness were limited due to heterogeneity of study designs.

Pre and post discharge TPC interventions implementing strategies to improve communication between care providers reduced hospital readmission rates (Giuffrida, 2015; Baxter *et al.*, 2018). Relevant and accessible information has been highlighted as a key factor in patient's transition to palliative care (Ronaldson and Devery, 2001). Other important factors include agreement, timing, and decision making amongst staff members (Agren Bolmsjö *et al.*, 2007). According to a systematic review (Ahmed *et al.*, 2004), the main problems with access to palliative care are lack of knowledge and education amongst health and social care professionals, and a lack of standardised referral criteria.

Patient outcomes identified in this review included improved quality of life, and reduced depression and dyspnoea in patients with heart failure in one study (Wong *et al.*, 2016).

The views of families and care givers should be considered when planning the transition from hospital to home or other settings (Carrillo *et al.*, 2018). The systematic review found limited research evidence for family related outcomes. Only one study reported on benefits for families in decision making around referrals to hospice care (Hanson *et al.*, 2019).

This systematic review has some limitations. Firstly, the inclusion criteria did not focus on all types of available evidence in the literature; therefore, reference tracking of previously published systematic reviews on the topic could not be conducted. This may mean that important studies may not have been included. However, we are encouraged that the systematic review by Saunders *et al.* (2019) similarly found few papers on the topic. Secondly, methodological and overall reporting quality of the included studies ranged between 50 and 98% according to the CCAT assessment, suggesting considerable variability in their quality. Moreover, there was heterogeneity among the design of the included studies (only one RCT was available), which limited the interpretability, comparability and ultimately the generalisability of the findings. Finally, there were only a limited number of studies reporting evidence for the effectiveness of TPC interventions in older adults with advanced non-malignant disease or frailty.

## Conclusions

Enabling smooth transitions to palliative care, described as “paramount” (Larkin *et al.*, 2007) and “essential” (National Consensus Project for Quality Palliative Care, 2004) to the provision of good care, has the potential to improve quality of life for patients, enhance shared decision making by families and deliver benefits for the healthcare system. This systematic review identified important outcomes related to healthcare services (readmissions and LOS), patients (quality of life) and families (decision-making) following TPC interventions in older adults with advanced non-malignant disease or frailty. However, the results may not be generalisable due to the heterogeneity and wide range of methodological and reporting quality of the included studies.

Prior to reaching any conclusions about the implications of TPC interventions on clinical practice and society, there is a need for high-quality studies that apply standardised study designs and outcome measures to address their effectiveness in this growing population. In

addition, there is a need to standardise the definition of TPC used and examine more homogenous samples. These actions should reduce heterogeneity between studies and improve the understanding of whether, and how, these interventions are effective or not. This evidence will be vital to inform how we extend access to integrated palliative care across the continuum of care for this population with complex needs and an often-unpredictable disease trajectory.

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Author and year	1. Prelim	2. Intro	3. Design	4. Sampling	5. Data collection	6. Ethics	7. Results	8. Discussion	Total (0–40)	Percentage
Braxter <i>et al.</i> (2018)	4	3	3	2	4	3	4	4	27	68%
Giuffrida (2015)	3	4	2	2	2	3	2	2	20	50%
Hanson <i>et al.</i> (2019)	5	5	5	4	4	5	5	5	38	95%
Morrison <i>et al.</i> (2016)	4	5	3	2	3	3	2	5	27	68%
Tuso <i>et al.</i> , 2013	5	5	3	3	2	5	2	3	28	70%
Wong <i>et al.</i> (2016)	5	5	5	5	5	4	5	5	39	98%

**Table A1.**  
Crowe critical  
appraisal tool (CCAT) –  
quality appraisal of  
included studies

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