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What are the Barriers and Facilitators to Palliative Care Education in Nursing and Residential Homes? – A Rapid Review.

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ABSTRACT

Background

There is currently insufficient high quality evidence to suggest that palliative care education can impact care home settings.

Aims

- To identify, appraise and synthesise all available evidence on the barriers and facilitators to providing palliative care education in residential and nursing care homes
- To generate recommendations to increase the effectiveness of future palliative care education programmes in care homes.

Methods

A rapid review searching CINAHL, MEDLINE, and ProQuest. One author screened full-text articles for inclusion. Any uncertainties were discussed with a second author.

Findings

Twenty-two articles were included in the full review. Analysis of the included articles revealed the following themes: 1. structural systems, 2. cultural and personal issues, 3. knowledge translation issues with interaction and overlapping between themes.

Conclusion

Addressing the barriers and facilitators when designing palliative care education programmes for care homes will lead to more successful outcomes.

KEYWORDS

Care home, palliative care, education, barriers, facilitators

KEY POINTS

- There is currently insufficient high quality evidence to suggest that palliative care education can impact care home settings.
- This review aims to identify, appraise and synthesise all available evidence on the barriers and facilitators to providing palliative care education in residential and nursing care homes and generate recommendations which will increase the effectiveness of future palliative care education programmes in care homes.
- Key barriers to delivering effective palliative care education in nursing and residential homes included home structure and support, care home culture, high staff turnover, and decreased engagement.
- Relationship building between and within care homes, individualised programmes, and including plans for sustainability can facilitate these educational interventions.

BACKGROUND

Sixteen to twenty-two percent of all deaths throughout the UK now occur in care homes (Bone *et al.*, 2018) with the average length of stay approximately 30 months.(LaingBuisson, 2017) This variance could be due to the different dependency levels seen between residential and nursing homes with nursing homes having a higher dependency of residents to residential care. In the UK by 2035, the number of very old adults (>85 years) with high dependency (needs 24 hour care) will almost double and older adults with medium (needs help at regular intervals throughout the day) or high dependency and dementia will be more likely to have at least two other co-morbidities.(Kingston *et al.*, 2018) The number of people dying out of hospital is increasing and studies suggest that end-of-life care provision in care homes needs to double by 2020.(Kingston *et al.*, 2017; Bone *et al.*, 2018)

Current provision of palliative care in care homes is lacking. In the United States, a recent study identified that 69% of care home residents were eligible for palliative care but weren't receiving any.(Stephens *et al.*, 2018) Care homes are often confused about the roles of external providers which leads to poor coordination of care and a delay in receiving services (Gage *et al.*, 2016) There is also evidence that symptoms at the end of life in care homes are poorly managed. A study from the Netherlands indicates approximately 43% of nursing home residents have pain with this number increasing in residents with vascular dementia to 54%.(Van Kooten *et al.*, 2017) This, along with other symptoms such as breathlessness, fatigue, and

noisy breathing can cause undue distress for residents and their families.(Ersek and Carpenter, 2013)

One proposed strategy to improve palliative care in care homes is to improve education provision.(Gamondi *et al.*, 2013) Palliative care education has proven to be effective in other multi-professional cohorts.(Warrington-Kendrick, 2015; Piili *et al.*, 2018; Rose Balicas, 2018) For example, a palliative care educational initiative for general hospital staff in America involved nurses, physicians, and therapy staff and lead to a 34.3 percent increase in referral to supportive (palliative) care.(Warrington-Kendrick, 2015) However there is insufficient high quality evidence to suggest that palliative care education can positively impact care home settings.(Anstey *et al.*, 2016) As a result of this, commissioners and providers are not in a position to develop and implement evidence based and effective palliative care education programmes in care homes.

The overall aim of this rapid review is to explore the barriers and facilitators to providing palliative care education programmes in care homes.

It has the following objectives:

- To identify, appraise and synthesise all available evidence on the barriers and facilitators to providing palliative care education in residential and nursing care homes
- To generate recommendations to increase the effectiveness of future palliative care education programmes in care homes.

METHODS

Design

A rapid review was chosen due to the rapidly evolving nature of evidence in the area of education, and due to the need to balance time and financial pressures with providing robust evidence.(Moher *et al.*, 2015) Rapid reviews follow a similar format to systematic reviews, but have a shorter turnaround time and are often more flexible depending on the reviewers' needs. (Polisena *et al.,* 2015). In this review systematic search process was followed to ensure rigour and every effort was made to expose all available evidence on the topic, however the grey literature was not searched and authors were not contacted to advise of any additional research they had in press. Due to the above pressures there was also no protocol created for the review, however stakeholders were invited to input throughout at regular meetings.

Types of Studies

Qualitative and quantitative studies including randomised controlled trials, cohort studies, process evaluations, and case studies were all included. Systematic and other literature reviews were also included. This review aimed to gain an understanding of general palliative care education therefore studies reporting on disease specific palliative care education interventions were excluded. Due to the rapid nature of this review, studies were also excluded that did not specifically focus on palliative or end of life training but included this only as part of a wider training package.

Types of Participants

Studies were included that focussed on outcomes relevant to employees in care homes. This could include but is not limited to: care home managers, registered nurses, healthcare assistants, domestic staff, other professionals.

Types of Interventions

Studies were included that delivered palliative care education interventions to nursing or residential care home staff. The intervention was defined as any form of training or education that was used to impart knowledge to care home staff. It could be delivered on- or off-site and take any form. In order to capture interventions globally where 'care homes' may not be a consistently used term the search strategy also included variations such as "rest", "long-term" or "convalescent" home or facility. (a full list of search terms is included in the supplementary material)

Search Methods

The following electronic databases were searched for eligible studies:

- CINAHL, EbscoHost (searched 14.02.2019)
- PubMed & MEDLINE, OvidSP (searched 20.02.2019)
- ProQuest (searched 21.02.2019)

A search strategy was developed with assistance from another researcher (CG) and clinical specialists in palliative care (supplement 1). Due to the rapid nature of the review and the rapidly evolving nature of the topic, searches were limited to articles published in the last ten years, peer-reviewed and available in English. In addition to electronic searches, the references of included studies were searched for additional appropriate publications.

DATA COLLECTION AND ANALYSIS

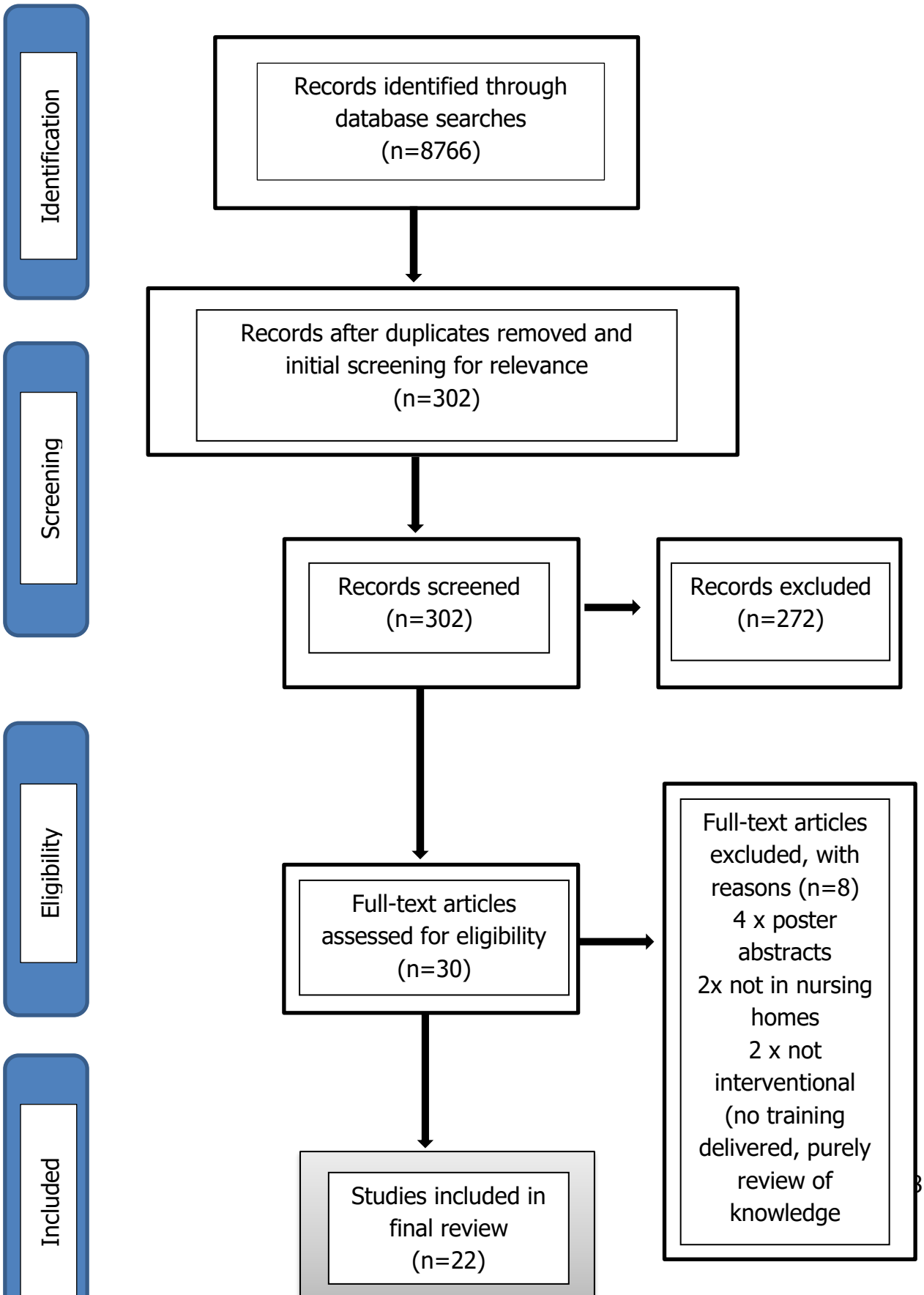
Selection of Studies

Following removal of duplicates, JM independently assessed the titles and abstracts of the articles identified to evaluate their suitability, using the selection criteria stated in table 1. Full texts of all articles were then screened by JM, where there was any uncertainty related to the eligibility of a record, this was discussed with CG. A flow diagram of search results is shown in figure 1.

Table 1 Selection Criteria

1. The research presented data on an education or training intervention in residential or nursing care homes
2. The training/intervention was aimed at those working in nursing/residential homes, including nurses, ancillaries, support staff, domestic staff
3. The education/training provided was specifically focused on palliative or end-of-life
4. The training did not focus on a specific disease (e.g. dementia).
5. Studies published in English in the last 10 years

Figure 1: Flow Diagram of Search Results



Data Extraction

Data was extracted and inserted into a spreadsheet. The following information was extracted:

- Paper: title, authors, publication
- Methodology
- Quality assessment
- Setting: Nursing or residential home (and country)
- Sample size
- Details of Educational Intervention
- Outcome Measures
- Barriers
- Facilitators

An exploratory approach was taken in order to gain familiarity with, and acquire more insight into, the barriers and facilitators.(Shields and Rangarajan, 2013) Using this approach, each text was examined for explicit barriers and facilitators, in addition anything identified in the text that could be interpreted as a barrier or facilitator to the intervention was included, even if this was not explicitly described by the author.

Assessment of Quality

The inclusive nature of the review meant that no specific quality assessment tool would suit all studies. Appraisal was therefore completed using Critical Appraisal Skills Programme (Critical Appraisal Skills Programme, 2013) checklists for the appropriate study type. For mixed-methods research, guidelines by O'Cathain et al (2008) (O'Cathain *et al.*, 2008) were used for good reporting. Studies were categorised as strong, moderate or low in quality to guide an overall assessment of the quality of the evidence. Low quality studies were not excluded. Study quality scores are reported in table 2.

Data Synthesis & Thematic Analysis

All data extracted pertaining to barriers and facilitators were collated on a single document. A framework approach (Ritchie *et al.*, 2013) was employed by first coding the data, then applying themes. This was done alongside CG using an iterative approach to provide reflection and increase insight.(Srivastava and Hopwood, 2017)

FINDINGS

Characteristics and Quality

A total of 8766 potential results were identified from the search strategy. After title and abstract scanning and de-duplication, 302 articles were selected for full text screening. Following full text screening, 22 full-text articles were identified for inclusion in the review. These are summarised below in table 2. Twelve studies were from the UK, seven from the USA, one from Australia, one from Hong Kong, and one was from Sweden.

Ten used purely quantitative methodology, six used a qualitative approach, and six were mixed methods.

When reviewing quality using the tools stated previously; seven articles were identified as strong, ten as moderate, and five as low quality.

Table 2: Summary of included articles

Paper	Methods	Intervention	Outcomes	Study Quality	Key barriers	Key facilitators
Wen et al 2012 USA	Quantitative cohort study	Six monthly inservice education sessions lasting approximately 30 minutes each.	A significant association was noted between number of inservice sessions attended and application of skills	Low	Incomplete attendance of all educational activities. Forms filled out incorrectly or incompletely	Staff felt the programme was basic but important Recording of the lectures so that other staff could access was useful
Hockley & Kinley 2016 UK	Quantitative longitudinal cohort study (7-years)	Gold Standards Frame-work in Care Homes programme (GSFCH, 2004)	Implementation of GSF led to an Increase in the percentage of residents dying in NCHs, increase in the following documentation: advance care planning, the last days of life and cardio-pulmonary resuscitation decisions.	Moderate	High Staff turnover	"Sustainability" training, Flexible facilitation, relationship-building, and commissioner-driven outcomes led to project going from charity funded to commissioner funded.
Lansdell 2011 UK	3-year qualitative	1. Development of a competency document for care home staff	All of the feedback reported an increase in confidence with providing	Low	Lack of key coordination in the home that led to conflicting	Enthusiasm and commitment of the care home staff.

	longitudinal cohort study	2. 5-day competency course based on the learning needs identified in phase 1 3. Linking of competencies to appraisal system.	end of life care and in accessing appropriate specialist support.		priorities between workload and competency meetings.	Process linked to the care home's appraisal system.
Farrington 2014 UK	Mixed methods case-study approach	"ABC course". Blended e-learning and face to face workshops to deliver end-of-life training to staff who provide end-of-life care less often	Improvements in participants' confidence in delivering end of life care, particularly in the core competency areas of symptom management, communication, and advance care planning.	Strong	High drop-out rate due to lack of time, perceptions of irrelevance, personal reasons, and the lack of internet facilities. Research barriers such as failure to complete questionnaires, high staff turnover, Lack of regular forum to share learning experiences. Problems with dissemination such as carers feeling that nurses did not take on board their comments.	Content of the e-learning user friendly and informative. Workshops useful to be able to ask if they were doing the right thing and to talk to someone about end of life as can be quite emotional

Kaasalainen et al 2014 Canada	Qualitative descriptive design	Hospice visits over a 2-day period for the southern palliative support workers (PSWs) and 1 day in duration for the northern PSWs; each day consisted of a 7– 8-hour shift.	PSWs commented on resident-focused care at the hospice, they were surprised with the lack of routine and were pleased to see how well integrated the PSW role is on the community hospice team.	Moderate	Expense to cover staff backfill will likely be a barrier Motivation of PSWs	Engagement and motivation of staff The partnerships created between LTC homes and hospice units.
Kataoka-Yahiro et al 2017 USA	Quantitative cohort study	This project included ten 1-hour training modules in palliative and hospice care and 1 four-hour face-to-face communication training.	The overall staff knowledge and confidence results were improved. The staff rated overall satisfaction of palliative care services lower than the family caregivers.	Moderate	Drop-outs, Staff scheduling conflicts Staff turnover Difficulty using the knowledge they learned into practice. Lack of ongoing support	Staff released from work to attend training Researcher disseminating outcome measures Individualised training focused on the culture of the community.
Letizia et al 2012 USA	Quantitative cohort study	Modules including a recorded lecture by a palliative care expert, text and web-based readings, and literature/poetry selections reflective of the module content	Reported level of confidence in providing palliative care increased significantly from the beginning to the end of the program. Nearly 93% of participants reported changing their practice as a result of this program.	Strong	Nil described	Convenient access with the ability to participate at times best suitable for their very busy schedules Ease of use of learning materials

Malik & Chapman 2017 USA	Quantitative cohort study	6-week educational program consisting of 45-minute sessions on the selected subjects in the curriculum.	Significant increase in knowledge for the participants. Certified nursing assistants were also able to identify additional learning needs.	Low	Nil described	Self-selection of participants Provision of lunch so participants can attend over lunch
Pitman 2013 Australia	Quantitative cohort study	The package provided written information on evidence-based assessment and intervention in the context of the palliative approach.	Statistically significant increase in mean knowledge and confidence immediately post-package. The knowledge increase was retained and was even greater after 6 months whereas the statistically significant increase in confidence was not retained at 6 months	Strong	Difficulty in getting responses for postal survey	Completed questionnaire when given to individuals face to face
Baron et al 2015 UK	Quantitative cohort study	Based on the GSFCH and responses to a baseline questionnaire, carried out by the ACP facilitator to gauge local training needs.	An increase of 85% in the number of Advance Care Plans completed in the training homes and a reduction in hospital deaths of 25% for residents from training homes	Moderate	Staff turnover Incomplete survey responses Incomplete information on ACP completion as reported by nursing home managers	Gaining manager's consent for study and informing them of data collection

Kinley et al 2015 UK	Mixed methods cohort study	GSFCH programme	"Being present" facilitation most effectively enabled the completion of the programme, through to accreditation. The cost savings in the study outweighed the cost of providing a 'being present' approach to facilitation.	Moderate	Staff turnover One NH closed down "Fitting it in" facilitation - facilitation was not given priority due to other constraints "As requested" facilitation - required NHs to contact facilitator when needed - did not happen Cost of facilitation	Use of facilitators to bypass the staff turnover as they were consistent source of knowledge Knowledge of the programme being facilitated Meeting other care homes and learning from case studies (ALS) "Being present" facilitation - holding monthly meetings so can tell where the NH is struggling Multi-layered learning
O'Brien et al 2016 UK	Mixed methods cohort study - only qualitative reported	Six steps to success program which has a workshop format addressing the core phases of EoLC within a six-stage cycle	Benefits to completing the programme were noted as; improvement in Advance Care Planning, improved staff communication/confidence when dealing with multi-disciplinary teams, improved end-of-life care	Strong	High sickness rates Staff turnover Inappropriate staff selected Lack of time to complete training	Facilitators who were consistent Individualised support to NHs Clear outline of commitment Facilitator to act as a mediator

Lee et al 2013 Hong Kong	Mixed methods cohort study	A series of seminars and on-site sharing sessions conducted in the hospital and each residential care home for the elderly (RCHE).	Knowledge gaps among RCHE staff existed in the areas of mortality relating to chronic diseases, pain and use of analgesics, feeding tubes, dysphagia, sputum management, and attitudes towards dying	Moderate	Staff turnover	Nil reported
Wen et al 2013 USA	Quantitative cohort study	Training based on the booklet Palliative Care in the Long-Term Care Setting from the AMDA	Significant improvements were found in scores for implementation of palliative care strategies in all eight areas before and after the educational intervention	Low	Lack of time, Lack of knowledge, Other higher priorities.	Engagement with leadership teams Encouragement to collaborate with community partners and local hospice Sharing between nursing homes of policies, forms, best practice, challenges and potential solutions
Hewison et al 2011 UK	Qualitative descriptive design	A series of Action Learning Sets (ALSs)	Improvements in end-of-life care included more consistent use of care plans, increased involvement of clients and their families in planning end-of-life care, more training for staff, and the use of events and	Moderate	Staff turnover and moving to other homes at short notice Staff sickness Increased workloads as a result of staff shortages	Format helped to develop trust and relationships between homes Provided backfill funding and travel expenses

			techniques to create opportunities for discussing the end of life.			
Hockley J 2014 UK	Action research qualitative design	Reflective debriefing groups (RdBGs)	The groups facilitated learning at three different levels (being taught, developing understanding and critical thinking) and enabled staff to feel supported and valued.	Strong	Staff turnover Perception that staff already had knowledge Sessions lengthy	Face to face provided emotional support Experienced facilitator Being inclusive to all staff
Curry C et al 2009 UK	Qualitative descriptive design	15 fortnightly half-day (four hour) training/practice development sessions.	Enhanced the provision of palliative care to residents, and provided ongoing training and awareness sessions for staff.	Low	Staff turnover	Nil described but all staff completed programme and made sustained changes to their nursing home.
Cox et al 2017 UK	Pre- and post-intervention evaluation design - Mixed methods	Three training sessions of one hour each were delivered within each care home.	Staff confidence in managing each of the 24 EoL symptoms increased post intervention (but not statistically significant). There was a 59% reduction in the number of residents who died in hospital from the six participating care homes in comparison to a 21% reduction from six comparison care homes.	Moderate	Management turnover Flexible interventions	Consider sustainability Engagement with staff from the outset Tailored intervention Collaborations between NH and healthcare professionals

Hockley et al 2014 UK	Cluster randomised-controlled trial	Action learning centred on 'leadership' in relation to implementing the GSFCH programme.	A greater proportion of residents died in those nursing homes receiving high facilitation and action learning but not significantly so. There was a significant association between the level of facilitation and nursing homes completing the Gold Standards Framework for Care Homes programme through to accreditation.	Strong	Managers need support of staff Closed culture around death and dying	Action learning sets engaged nurse managers Learning contract over a designated time period Challenging the 'taken for granted assumptions' which are often invisible when trying to change practice.
Mayrhofer et al 2016 UK	Mixed methods cohort study	Train the Trainer (TTT) End of Life Care Education Programme for care home staff.	Results showed a positive association between care home stability, in terms of leadership and staff turnover, and uptake of the programme. Working with facilitators was important to trainers, but insufficient to compensate for organisational turbulence.	Moderate	Lack of designated time Unstable homes Not self-selected to take part Management support Programme fitting with trainers' roles and responsibilities Opportunities for staff to work with trainers daily	Teaching integrated with patterns of working Group work that could offer immediate debriefing/emotional support Use of facilitators A stable environment Senior management support for the programme

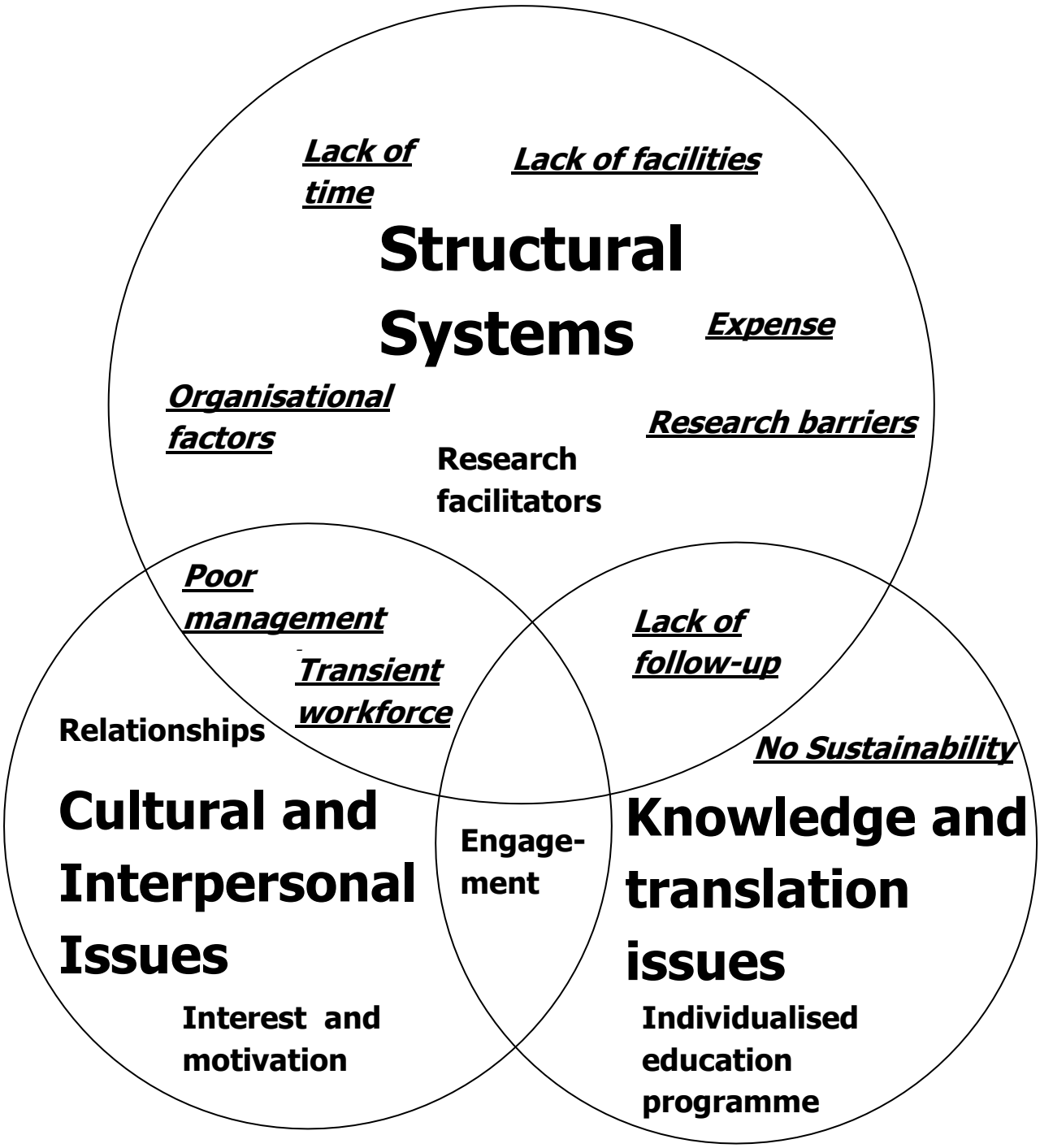
Hockley J et al 2010 UK	Quantitative cohort study	The GSFCH programme, a 4-day facilitative learning course 'Foundations in Palliative Care for Care Homes' and a model of high facilitation	There was a significant increase in use of Do Not Attempt Resuscitation (DNAR) documentation, advance care planning and use of the Liverpool Care Pathway (LCP). An apparent reduction in unnecessary hospital admissions and a reduction in hospital deaths from 15% deaths pre-study to 8% deaths post-study were also found.	Moderate	Staff management Difficulty in accessing management	Regular visits from the same GP Robust homes 'high facilitation' model
Cronfalk et al 2015 Sweden	Qualitative cohort study	1. Three seminars lasting about two hours. 2. Separate seminars for staff (5x2 hours for ENs and CAs and 4x2 hours for RNs), 3. Three shared seminars (about 1.5 hours) introducing the LCP,. Introduction of a seven	Results suggest that staff reported positive experiences as they gained new knowledge and insight into palliative care independent of the educational program design. Results also show that staff experienced difficulties in talking about death Lack of support from ward managers and insufficient collaboration and of a common language between	Strong	Poor learning climate, Managers ambiguity about their own professional role, Lack of structure, Lack of clear definitions of ownership, Confusion about responsibility among all professions. Insufficient time to discuss, evaluate, and consider their	Managers encourage staff to continuously participate in competence-building activities. Mutual goals and commitments.

		step model with focus on medical treatment and symptom relief	different professions caused tension in situations involved in caring for dying people.		own and/or colleagues' experiential knowledge.	

Synthesis

The main data extraction can be found in appendix 2. Analysis of the included articles revealed the following themes: 1. structural systems, 2. cultural and personal issues, 3. knowledge translation issues. The figure below shows the key themes with their barriers and facilitators and how these interact. Barriers are presented in underlined italics and facilitators in normal text. Some themes may be applicable to individuals e.g. researchers/care home staff but all are presented in a single diagram as the majority will be relevant to all.

Figure 2: Diagram of Themes



Themes will be discussed separately below however it is important to understand that these themes do not stand alone, and there are a number of overlapping and interacting elements of each theme.

Structural Systems

Structural systems are overarching structural and organisational factors which influence the way care homes operate or how research can be conducted within them. A perceived lack of time to attend training and complete evaluation was cited as one of the biggest barriers to care home staff engagement.(Wen, 2013; Farrington, 2014; Cronfalk *et al.*, 2015; Mayrhofer *et al.*, 2016; O'Brien *et al.*, 2016; Srivastava and Hopwood, 2017; Kinley *et al.*, 2018) There was improved attendance when time was specifically allocated to training or facilitation (Mayrhofer *et al.*, 2016; Kinley *et al.*, 2018) and shorter training sessions were preferred.(Hockley, 2014)

Organisational factors and infrastructure also influenced the way that research could be conducted within the care home setting, and this in turn could lead to issues with implementing and evaluating interventions. For example, incomplete data collection in the form of non-completion of surveys,(Pitman, 2013) unfinished evaluation forms,(Wen *et al.*, 2012; Baron *et al.*, 2015) and incomplete patient information (Baron *et al.*, 2015) were barriers to evaluating interventions. Interestingly, in two studies high completion rates were seen when surveys were distributed and collected by the researcher (Pitman, 2013; Kataoka-Yahiro *et al.*, 2017) however no comparison was made with other forms of delivery.

Insufficient facilities within care homes provided a barrier, particularly in relation to computer-based education. For example, in a study on blended e-learning in care homes unreliable internet connectivity and limited computer access meant that staff couldn't access training material.(Farrington, 2014)

The final barrier in this theme was expense, as many interventions are costly to implement. Only three programmes received funding, this covered carers attending training in one study (Kaasalainen *et al.*, 2014) and travel/lunch expenses in the other two.(Hewison *et al.,* 2011; Malik and Chapman, 2017) Another article discussed expense in relation to the cost of employing facilitators to assist and translate knowledge into practice. Whilst this cost was significant the authors believed this to be justified if admissions to hospital were reduced at the end of life.(Kinley *et al.,* 2018) One article reported that if care homes structured the evaluation of interventions to achieve commissioner driven outcomes then the programme was more likely to be seen as successful and adopted for longer-term funding.(Hockley and Kinley, 2016)

Facilitators in relation to the structure of education programmes included care homes signing a learning contract and/or mutual goal setting.(Hockley *et al.*, 2014; Cronfalk *et al.*, 2015; Hockley and Kinley, 2016; O'Brien *et al.*, 2016) This organisational commitment appeared to encourage attendance and gave care homes direction for knowledge translation.

Cultural and Inter-Personal Issues

Barriers and facilitators in this theme are related to the culture of care homes including management style, expectations of roles, relationships between staff, staff engagement and staff turnover, sickness, or absence.

The main barrier in association with care homes was a culture where high staff turnover was the norm, compounded by frequent staff sickness and absence.(Curry *et al.,* 2009; Hockley *et al.*, 2010; Hewison *et al.,* 2011; Lee *et al.*, 2013; Farrington,

2014; Hockley, 2014; Baron *et al.*, 2015; O'Brien *et al.*, 2016; Hockley and Kinley, 2016; Cox *et al.,* 2017; Kataoka-Yahiro *et al.*, 2017; Kinley *et al.*, 2018) Organisationally unstable care homes, with a culture of frequent staff changes, meant that often staff members had left between evaluations and the instability of management made bringing about changes difficult. In one study, two thirds of the staff who had participated in an education programme had left by the end of the evaluation (Curry *et al.*, 2009) and in another; of the 37 care homes at the end of the study, only 11 had maintained both their coordinators.(Kinley *et al.,* 2018)

In addition to this, the selection of inappropriate staff to participate in training provided a barrier to knowledge translation.(Cronfalk *et al.*, 2015; O'Brien *et al.*, 2016) If staff were too junior, not supported by management, or perceived a lack of ownership towards dissemination of the information learnt then education was not effective and changes were not instigated. Conversely, supportive managers saw improved attendance and more positive outcomes.(Cronfalk *et al.*, 2015; Mayrhofer *et al.*, 2016; Kataoka-Yahiro *et al.*, 2017)

Relationships also played a large part in the success of a programme. Relationship building between care homes, educators, and research teams led to improved engagement in education programmes, and evaluation.(Hewison *et al.,* 2011; Wen *et al.*, 2012; Kaasalainen *et al.*, 2014; Hockley and Kinley, 2016; Kinley *et al.*, 2018)

Knowledge and Translation Issues

The final theme that arose was in relation to the ease of participants gaining knowledge and feeding it back to the care home in order to make meaningful changes.

A simple, flexible, individualised education programme ensured that staff could gain knowledge as easily as possible.(Lansdell, 2011; Letizia and Jones, 2012; Wen *et al.,* 2012; Farrington, 2014; Hockley, 2014; Mayrhofer *et al.*, 2016; O'Brien *et al.*, 2016; Cox *et al.,* 2017; Malik and Chapman, 2017) Engaging with care homes from the beginning of a programme ensured that the intervention met their needs in terms of structure and delivery.(Letizia and Jones, 2012; Wen *et al.,* 2012; Mayrhofer *et al.*, 2016; O'Brien *et al.*, 2016; Cox *et al.*, 2017; Malik and Chapman, 2017) While e-learning was convenient allowing staff to integrate training with their patterns of working, provision of face-to-face teaching was often preferred as it allowed participants to ask questions and participate in discussions, as well as providing emotional support due to the end of life training content.(Farrington, 2014; Hockley, 2014; Mayrhofer *et al.*, 2016) Being able to access recorded lectures ensured that staff could access the content despite being unable to attend the session.(Wen *et al.*, 2012)

Lack of support to implement knowledge led to limited sustainability.(Hockley *et al.*, 2010; Lansdell, 2011; Hockley, 2014; Hockley and Kinley, 2016; O'Brien *et al.*, 2016; Cox *et al.*, 2017; Kataoka-Yahiro *et al.*, 2017; Kinley *et al.*, 2018) Staff members often had good intentions to disseminate and implement learning, yet still found this difficult.(Kataoka-Yahiro *et al.*, 2017) The use of facilitators provided a way of supporting knowledge translation.(Hockley *et al.*, 2010; Hockley, 2014; Hockley and Kinley, 2016; O'Brien *et al.*, 2016; Kinley *et al*, 2018) However facilitation needed to be consistent, regular and provided by an experienced individual in order to combat staff turnover.(O'Brien *et al.*, 2016; Cox *et al.,* 2017; Kinley *et al.*, 2018) Other ways to encourage sustainability were targeting outcomes linked to the care home's

appraisal system,(Letizia and Jones, 2012) providing sustainability training,(Hockley and Kinley, 2016) and regular visits by the same GP.(Hockley *et al.*, 2010)

DISCUSSION

A number of barriers and facilitators to providing end of life education in care homes have been highlighted in three themes: structural systems, cultural and interpersonal issues, and knowledge translation issues. It is important to recognise that some barriers, such as transient workforce and lack of facilities may be more difficult to overcome, however focusing on more flexible barriers and facilitators, especially ones which bridge themes may help to improve the effectiveness and acceptability of education programmes. Adapting programmes to consider those which can be altered by the educator or researcher such as engagement, relevance, methods of training and evaluation, and sustainability will ensure maximum success.

Some barriers and facilitators discussed confirm what has already been documented in relation to challenges with care home culture and readiness, preference for individualised programmes,(Goodman *et al.*, 2017) and ensuring stable infrastructure.(Norton *et al.*, 2018) The importance of building relationships between the education provider and care home has also been recognised.(Robbins *et al.*, 2013; NHS England, 2016; Goodman *et al.*, 2017)

Our review reveals new evidence for researchers and commissioners emphasising the importance of two-way staff engagement, an individualised programme for nursing homes, and support to ensure sustainability. Engaging care homes and staff

members from the start ensures outcomes are tailored to the needs of the home and creates ownership, which can encourage attendance and commitment.(Chambers *et al.,* 2017; Cruickshank, 2018) Evidence from nursing home education in oral health supports this by suggesting that attitudes and perceptions towards training can be addressed from the start to ensure success.(Kullberg *et al.*, 2010) Consulting care home staff on their learning needs prior to delivering training could also improve engagement, relevance of training and build relationships between the educator and individuals. In addition, regular facilitation following the intervention addresses sustainability, despite staff turnover (Hockley and Kinley, 2016; Kinley *et al.*, 2018) therefore those planning educational interventions should ensure that there are resources in place to support this. Importance also needs to be placed on relationships between individual staff members which echoes previous research by Chambers et al. (2017)(Chambers *et al.*, 2017) which emphasised the importance of a supportive environment and managerial support to allow for effective knowledge translation.

Advances in technology clearly offer an opportunity for innovative and cost-effective means of delivering education initiatives. However, currently there is insufficient evidence on the best use of technology, and how to overcome some of the associated challenges such as lack of connection with others, and lack of opportunity for peer engagement. In Northern Ireland, Project ECHO (Extension for Community Health Outcomes) has tried to address these barriers with some success by developing a virtual community of practice involving nursing home staff managing pain in advancing dementia.(Jansen *et al.*, 2018) This allows participants to visually interact and share knowledge with each other and specialist teams.

An interesting result from our review was an increase in survey responses from an evaluation when paper surveys were delivered and collected by the researcher rather than administered electronically. This contradicts previous research where electronic methods were favoured,(Kaplowitz *et al.,* 2004) but may be due to the lack of access to a computer/emails in care homes. To ensure this barrier is overcome, evaluators could distribute evaluations to care homes in both electronic and paper form. Future research could seek to explore technological challenges in more depth, including the potential use of technology in delivering and evaluating interventions e.g. comparing electronic surveys administered to care home staff via e-mail versus a social media platform.

Few studies explored resident outcomes and, where this was attempted, it was either poorly reported or required a large commitment of researcher time to look through case notes. Further methodological work would also be beneficial to identify a reliable, efficient way of collecting service-user data in order to demonstrate the impact of interventions on outcomes such as advance care planning, emergency admissions at the end of life, and place of death.

Strengths and Limitations

This review is the first looking at barriers and facilitators to end-of-life care education programmes in care homes. The search was designed to be as inclusive as possible, however due to the change in the population, care home provision, and the limited time allocated to the review, the search was limited to articles published in English in the last ten years, therefore it is possible some relevant literature was missed. As residents in nursing homes are increasingly more complex,(Kingston *et*

al., 2018) the decision was also made to exclude articles that focussed on a single condition, therefore this perspective is absent from our review.

Another limitation was the short time to complete the review. Although our search strategy was systematic and robust we did not search grey literature, therefore some evidence may have been missed. However it is worth acknowledging that the themes were repeated throughout the literature therefore it is anticipated that data saturation was reached.

CONCLUSION

Structural systems, care home culture, high staff turnover and decreased engagement in training are key barriers to delivering good quality, effective palliative education in care homes. However building strong relationships with, and within care homes, creating individualised programmes, and factoring in sustainability can facilitate end-of-life educational interventions. A more complete understanding of these barriers and facilitators, and identifying means of challenging the barriers will likely lead to more successful, sustainable end of life educational interventions and research in care homes.

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Supplement 1: Search Strategy

CINAHL with full text 14/02/2019

S1: AB (nursing OR residential OR care OR rest OR convalescent OR long-term) N1 (home* OR facility*)

S2: ABtraining OR ABeducation OR ABlearning OR ABknowledge

S3: S1 AND S2. Limiters = peer reviewed

S4: Limiters: English; 2009-2019; journal.

PubMed & Medline 20/02/2019

S1: (((training [mh] OR education [mh]) OR learning [mh]) OR knowledge [mh])
Filters: published in the last 10 years; humans; field: title/abstract

S2: ((nursing home [mh] OR residential home [mh]) OR care home [mh] OR rest home [mh] OR long-term care [mh])
Filters: published in the last 10 years; humans; field: title/abstract

S3: (#1) AND (#2)
Filters: published in the last 10 years; humans; field: title/abstract

ProQuest on 21/02/2019

S1: (nursing OR residential OR rest Or convalescent OR long-term) N1 (home* OR facilit*)

S2: AB(training) OR AB(education) OR AB(learning) OR AB(knowledge)

S3: 1 AND 2. Limits: peer reviewed; last 10 years