

Implementing e-learning and e-tools for care home staff supporting residents with dementia and challenging behaviour: A process evaluation of the ResCare study using normalisation process theory

Dementia

2020, Vol. 19(5) 1604–1620

© The Author(s) 2018



Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/1471301218803195

journals.sagepub.com/home/dem



Julia Keenan and Fiona Poland

School of Health Sciences, University of East Anglia, UK

Jill Manthorpe 

Social Care Workforce Research Unit, King's College London, UK

Cathryn Hart

R&D Department, Humber NHS Foundation Trust, UK

Esme Moniz-Cook

Faculty of Health Sciences, School of Health and Social Care, University of Hull, UK

Abstract

Dementia-related symptoms, sometimes termed challenging or distressing behaviour, can give rise to significant distress in care homes. Individualised formulation-led interventions show promise in reducing these behaviours. ResCare, a cluster randomised controlled trial in England, tested an online individualised intervention, comprising e-learning and decision support e-tools, designed to enable staff to better support residents with such symptoms. Normalisation process theory was used to understand the implementation processes. We analysed contextual process

Corresponding author:

Jill Manthorpe, Social Care Workforce Research Unit, King's College London, Strand, London WC2R 2LS, UK.

Email: jill.manthorpe@kcl.ac.uk

data for all 27 'intervention' care homes and identified three implementation mechanisms. These were examined for four illustrative case study homes. Seven qualitative interviews with care home staff and one interview with two research therapists informed this understanding. The main barrier to implementation was difficulty in conveying a sustained understanding of the value of individually tailored interventions. Emphasis was placed on training rather than practice change. Implementation seemed easier in smaller homes and in those with flexible managerial styles where transfer of knowledge and skill might have been easier to achieve. Take up of e-learning and e-tools proved hard. There may be a need to continually promote 'buy-in' of the potential benefits of individualised formulation-led interventions, and this would have to be congruent with other priorities. Interventions within care homes need to consider organisational readiness, capacity for innovation and ongoing appraisal and adjustment to maintain changes in practice.

Keywords

challenging behaviour, dementia, training, care homes, normalisation process theory

Background

An estimated 311,370 people with dementia live in care homes in the United Kingdom (UK) (Prince et al., 2014) where dementia-related symptoms described as 'challenging behaviour' can cause significant burden and distress in these settings (van Duinen-van den IJssel et al., 2018). For the purposes of this paper, challenging behaviour is defined as 'an expression of distress in an individual with dementia (or others in the environment) arising from physical or psychological unmet need in the person with dementia' (Moniz-Cook & James, 2017). 'Others' in the environment can include residents, staff or visitors. Lack of capacity to manage these symptoms may mean residents are admitted to hospital inappropriately or are moved to other care homes (Feast, Moniz-Cook, Stoner, Charlesworth, & Orrell, 2016). There is a growing interest in individually formulated 'case-specific' interventions such as finely tailored care plans to help support people with dementia and challenging behaviour (Holle, Halek, Holle, & Pinkert, 2017; Moniz-Cook et al., 2012). Most such interventions involve some aspect of staff training in their development and delivery, yet few care home staff have the opportunity to access sustained professional education (Beer et al., 2009; Goodman et al., 2017). A recent review of dementia education (Surr et al., 2017) across the workforce concluded that training is most likely to be effectively delivered for dementia care staff if it is: in the form of face-to-face delivery using group-based activities and discussion; tailored to those attending by being relevant to their employment; delivered by experienced facilitators; combining theory and knowledge with opportunities to apply the learning through relevant practice-based activities; and of an hour or longer in duration.

Nevertheless, there is evidence that care workers can benefit from online training. In United States (US), nursing homes staff working with people with dementia responded positively to online training to help them better manage challenging behaviour (Hobday, Savik, Smith, & Gaugler, 2010; Irvine et al., 2012). For medical professionals, staff training in the use of online-based tools enhanced staff access to relevant information, where content can be standardised, easily updated and revised (Ruiz, Mintzer, & Leipzig, 2006), with

options for working at their own pace as required to overcome time pressures (Beer et al., 2009). If such an approach can be transferred to the care home sector and its staffing, this may foster better support for residents with challenging behaviour and lead to better outcomes. Such tools could involve individualised assessment, planning and responses. The ResCare study (Moniz-Cook et al., 2017), from which this paper is developed, reports the trial findings of an intervention to test the potential benefits or otherwise of an online approach to provide training to help staff better manage behaviour that challenged them in a sample of 27 English care homes caring for residents with dementia.

The study

ResCare was the name given to a cluster randomised control trial (cRCT) to test an e-learning and decision support intervention to help care home staff support residents with commonly occurring challenging behaviours. The development of the tool has been fully described elsewhere (Moniz-Cook et al., 2017). The e-learning for staff comprised three interactive multimedia modules with built-in feedback to introduce care home staff to observational skills and a formulaic approach for individualising care planning and subsequent actions. Staff systematically were asked to enter information on a computer programme about what they thought contributed to a resident's challenging behaviour, such as their health and abilities, their life history, communication style and details of others' responses to the specific behaviour. The decision support system within the computer programme included assessment tools that took a standard approach to information collection and then applied logic-based algorithms. These generated bio-psychosocial 'action plans' which staff could implement. A 'cascaded learning' approach was envisaged with the 'pioneer' care staff first completing the intervention and then 'championing' the approach to their colleagues (these were referred to as 'Champions'). The intervention study focused on what was categorised as 'clinically significant' challenging behaviour (Moniz-Cook et al., 2017) in judging the impact of the intervention on resident outcomes.

The aim of the present paper is to report the findings of the embedded process evaluation that was undertaken to deepen understanding of the contexts within which the interventions were delivered and what might help implement future similar interventions within care homes. A second aim is to report on the contextual and organisational mechanisms, barriers and facilitators, to inform future practice and research. As Goodman et al. (2017) have warned, when deciding how and when to allocate resources to care homes to support new initiatives, the organisational contexts of the care homes must be considered and assessed.

Theoretical approaches to process evaluation

Theoretical approaches to guide implementation studies are traditionally underpinned by psychological 'rational actor' models of explanation (Ramsay, Thomas, Croal, Grimshaw, & Eccles, 2010). An important theme in such work is that of 'resistance' or 'refractory behaviours' of people involved in implementing changes. Positing such behaviours assumes that implementers' 'attitudes' to the innovation are at the root of any problems (Yarbrough & Smith, 2007). Such assumptions overlook the likely important contribution of contextual, cultural and organisational factors, which will characterise any organisation including care homes in England in which such factors vary greatly (Bamford, Heaven, May, & Moynihan, 2012). We used a theoretical implementation framework, normalisation process theory

Box 1. Contextual data on care homes participating in the ResCare study.

- Data including number of resident ‘beds’, staff, management details, type of ownership, with or without nursing care, geographical region, proportion of residents with challenging behaviour in the care home
- Care staff demographics (e.g. age, gender, age when left education, number of years’ experience) and staff turnover
- Whether home was in the experimental or control arm
- Data detailing organisational change within care homes over the course of trial

Source: adapted from Moniz-Cook et al. (2017).

(NPT) (May et al., 2007) to help understand the relative contribution of factors that inhibited or enabled whether the ResCare intervention could be incorporated into care home practice and to learn about what staff in care homes do individually and collectively to affect how far the intervention could be embedded (or “normalised”) in homes. This approach was chosen as it provides a means to identify the dynamic human processes at work when service improvers seek to implement, integrate, or embed new sets of practices or ways of doing things into ‘normal’ routine practice. NPT is built around a set of four core constructs that represent key generative mechanisms of social action which can be related to the different kinds of work that people do when they implement and integrate a complex intervention (May et al., 2007). These four constructs help examine: (1) the ways that people make sense of the practice (‘Coherence’); (2) how they engage and participate with it (‘Cognitive participation’); (3) how stakeholders come to engage with or ‘enact’ the practice (‘Collective action’); and (4) how they appraise its effects (‘Reflexive monitoring’). NPT was originally developed specifically to explain why eHealth initiatives failed against expectations to be embedded into routine practice (May, 2006). The approach seemed especially relevant to this present study and has been used to understand intervention implementation processes in other dementia care initiatives (Bamford et al., 2012; Dickinson, Gibson, Gotts, Stobbart, & Robinson, 2017). The present paper draws on several studies using NPT in a variety of health and care home settings.

Methods

Study design

The analysis used detailed process data collected during the cRCT by the research team (October 2010–October 2012). This was supplemented by qualitative data collected in May–June 2013. Both sets of data were linked, using NPT to:

1. To identify and link contextual features of care homes (Box 1), process and outcome data to identify implementation mechanisms;
2. Develop a typology of the cultures of the 27 care homes where the intervention was delivered (with a further 30 homes not randomised to receive the intervention).

Box 2. Existing data on process and outcomes of implementing the intervention.

- Researcher and programme manager notes of perceptions of helpfulness of staff when visiting care homes, ease of access to staff/data/interview space
- Details of researchers' attempts to contact homes and the researchers' comments
- Researcher notes/comments on individual homes
- Intervention therapist's notes on individual homes
- ICT Engineer notes on individual homes
- Focus group transcripts: research team discussing implementing the technology/training in homes and off-site
- Reasons care homes gave for withdrawal from the study
- Analysis of the Champions' evaluation of e-learning
- Research team's perceived receptivity of homes to the e-learning and e-tools

Qualitative data (Box 2) were checked for accuracy in transcription and location then re-examined and discussed in data meetings to refine and validate the initial synthesis;

3. Analyse the typology and select and recruit four illustrative case study homes from the 'intervention' homes.
4. Collect and analyse interview data, to increase understanding of implementation processes.

Interviews were conducted by a researcher (JK) who had not been part of the trial, to minimise risk of bias, audio-recorded and then transcribed. Each case study home was assigned a pseudonym. All managers are referred to in the female gender to minimise risk of identification. Data collection was undertaken with informed consent. Ethical approvals were received from the York Research Ethics Committee of the National Research Ethics Service (reference number 09/H1311/).

Data analyses

We examined process data (Boxes 1 and 2) in all homes. Using framework analysis (Ritchie & Lewis, 2003) to classify and organise data by themes, we identified barriers and facilitators to successful implementation. All intervention homes ($n = 27$) were distributed within this framework matrix, as providing an 'enabling' or 'disabling' environment for the research. Where data for a home were unclear or incomplete, this was discussed and clarified by the research team. Finally, four illustrative case study homes were identified and selected to span both the range of contextual factors and implementation processes identified in the data analysis; and to represent as far as possible the great variety of care homes in England.

Further telephone interviews (20–50 minutes) with the case study care home managers were conducted by JK between May and June 2013. The research intervention nurse and therapist (both health professionals involved in delivering the intervention) were also interviewed together to discuss their perceptions of the case study homes. All interviews were recorded and transcribed verbatim. NPT was used to inform, guide and structure the collection, coding and interpretation of all interview data.

Findings

Implementation mechanisms

Three inter-related mechanisms of implementation of the intervention (development and use of action care plans) were identified. First, was the access to and use of care homes' resources in terms of IT (e.g. broadband) for e-learning activity to be able to undertake the action care plans; second was their demonstrating capacity to get action care planning into care practice, by coordinating stakeholder resources (such as levels of engagement with NHS professionals visiting the home to provide clinical care to residents) and sustaining staff engagement with the action care planning; and, third, was the receptivity of care home staff to e-learning and the individually tailored action care planning that followed.

Implementation typology

Table 1 outlines implementation features and outcomes across homes for both single, privately owned homes and those that were part of larger commercial organisations, referred to here as 'corporate homes'. Most single, privately owned homes could upgrade the home's IT if needed; only one found this difficult. Over one-third of corporate homes could not do so easily as their IT systems were organised centrally by their head offices.

Enabling or *disabling* leadership and management cultures, identified in the research, were found equally distributed across both single and corporate homes. For homes where management or ownership changed, this did not always negatively affect delivery of the intervention. For example, a new manager's enthusiasm could help the research, or conversely, a lack of interest could lead to delays. Implementation in relation to enabling and disabling training cultures within homes identified in the research was similarly mixed. The 'difficult to engage' homes, referred to as 'challenging' for the researchers, were often part of larger corporate organisations, most with their own training imperatives, in all sectors: these were *enabling* for IT, yet *disabling* in both leadership and training culture.

Case study homes

As noted above, those recruited as case study homes spanned a range of characteristics such as size, resident group, and geography, since this could influence local labour markets, staff turnover, IT access (rural areas might have limited internet access) and the culture of care. Three of the four homes were part of larger corporations; one was a single privately owned home; one had additional nursing facilities; and two had specialist dementia units or 'floors' (see Table 2).

Thirteen staff from the case study homes were approached as potential participants in the process evaluation; a mix of managers, Champions, and care staff with different roles. Seven agreed to be interviewed: three managers, two care assistants and two senior care assistants (see Table 3).

Using the four NPT theoretical constructs mentioned above, data from analysis of case study interviews and other data were brought together to explore why effective delivery of the intervention was hard to achieve (for trial findings, see Moniz-Cook et al., 2017).

Table 1. Typology of 27 care homes (coded by ID number) according to implementation mechanisms.

Ownership	IT system	Leadership/management approach to the study	Training culture	Care homes: <i>n</i> = 27 researchers perception of the home's engagement in the intervention	
Single home Private/commercial and not for profit	Enabling	Enabling	Enabling	1038 (good)	
				1004 ^a (good)	
				1028 ^a (good)	
				1016b (average)	
				1098 (average)	
	Disabling	Disabling	Disabling	Disabling	1073 (challenging)
					1093 (average)
					1069 ^a (challenging)
					Nil
					1111 (average)
Corporate homes Private/commercial, not for profit and local authority	Enabling	Enabling	Enabling	1108 ^c (good)	
				1066 ^c (good)	
				1015 (good)	
				1043 ^a (challenging)	
				1072 (average)	
	Disabling	Disabling	Disabling	Disabling	1048 (average)
					1001 ^c (good)
					1079 ^{a,c} (average)
					1078 ^c (challenging)
					1013 ^{c,f} (challenging)
Enabling	Enabling	Enabling	Enabling	1103 ^{a,d} (challenging)	
				1027 (challenging)	
				1062 (challenging)	
				1082 (average)	
				1105 ^{a,e} (average)	
Disabling	Disabling	Disabling	Disabling	1085 ^e (average)	
				1087 (challenging)	
				1106 ^a (challenging)	
				1082 (average)	
				1105 ^{a,e} (average)	

^aNew manager put in place during trial.

^bHome owned by another (group of 2).

^cNew company took over during duration of trial.

^dA safeguarding investigation (concern about mistreatment/neglect) took place during trial.

^eLocal authority reorganisation during trial.

^fDropped out of study following intervention.

Source: adapted from Moniz-Cook et al. (2017).

Coherence: Does the intervention make sense?

All seven interview participants expressed uncertainty about the purpose of the intervention, and none of them defined it as an individually tailored bio-psychosocial intervention for residents with dementia and significant challenging behaviour. The research therapist (part

Table 2. Overview of context of case study homes (n = 4).

	Happy Haven 1038	Careful Place 1072	Home Court 1048	Lifelong Lodge 1087
Ownership	Single privately owned care home	Private/commercial (group) care home with nursing care	Private/commercial (group) care home	Not for profit (group) care home
Client group or care focus	Mixed client group: organic and functional mental health problems	Registered with the Care Quality Commission (CQC) for residents with dementia and for residents with physical disability	Registered for residents with dementia and for residents with physical disability	Registered for residents with dementia
Size of home and staffing numbers	Small home (29 beds, 27 full-time staff equivalents)	Medium-sized home (45 beds, 12 full-time staff equivalents)	Large home (82 beds) accurate staffing figures unavailable.	Small home (30 beds, 37 full-time staff equivalents)
Geographical context	Urban area. Home adjoined converted houses, bit 'run down'	Suburban – not built up area. Converted home within own grounds	Suburban – not built up area	Semi-rural/village location but 'Not a spacious home'
Care culture or organisation	Home run on 'relaxed family basis', staff members related well to each other	'Cottage hospital' feel. Care staff described like 'shop floor girls'	Designated 'floor' (unit) for dementia Staff group allocated to resident group –working on one side of the home or the other	Specific dementia unit

Comments shown in italics are perceptions taken from process notes and interviews with the ResCare research team. Staff numbers shown as full-time equivalents. Numbers linked to pseudonyms represent anonymised dataset ID. Source: adapted from Moniz-Cook et al. (2017).

Table 3. Case study homes ($n = 4$) and participating staff ($n = 7$).

Care home pseudonym	No. of potential care staff participants (grade)	Changes in personnel since intervention	No. of interview participants, by grade
Happy Haven	$n = 3$ (1 manager, 2 senior care assistants)	No change	$n = 3$ (1 manager, 2 senior care assistants)
Careful Place	$n = 3$ (1 manager, 2 care assistants)	One care assistant went on maternity leave	$n = 1$ (manager)
Home Court	$n = 5$ (1 manager, 2 senior care staff, 2 care assistants)	Manager stepped down but in home once a week to train staff; one care worker employed as an acting manager, one care worker left, one unable to be released	$n = 1$ (care assistant)
Lifelong Lodge	$n = 3$ (1 manager, 2 care assistants)	One care worker on long-term leave after training	$n = 2$ (1 manager, 1 care assistant)

Source: adapted from Moniz-Cook et al. (2017).

of the trial delivery team) considered aspects of the intervention as not entirely new in some intervention homes, perhaps contributing to confusion or overlap with the action care plans of the intervention. For example, some staff had recalled that ‘the training’ had addressed ‘*thinking about how they [the person with dementia] – see things*’ (Lifelong Lodge, care assistant), and that it was about the ways in which staff understood what might be perceived as difficult to manage or ‘challenging’. Those care home staff designated by care homes as Champions, who were expected to take forward the intervention within a cascaded learning approach, did not see themselves in this role.

Attaining overall coherence and ensuring those engaged in delivery could make sense of the intervention could be difficult to maintain over the all phases of the intervention. The components of training (in earlier stages) and care planning (in later stages) were therefore considered separately and seen to be affected by the shifting contexts in care homes where different staff may be simultaneously engaged in diverse changes or activities which might variously distract from the intervention. However, the most commonly cited obstacle to coherence did not relate to care home characteristics, but to the procedures required for the cRCT itself within the care homes: the lengthy gaps between first contacts, data collection, intervention activities and adjustments to the intervention all undermining coherence. As one example, at first the e-learning was run independently in the care homes without a therapist, but this was not well received, so the e-learning was arranged off-site for groups of staff with the therapist in attendance. In addition, the decision support tool designed to deliver individualised ‘action plans’ needed more staff time than first calculated; thus, face to face support and follow-up were offered by the therapist.

Fragmented coherence also undermined willingness and ability to participate in the study, and the research team had to do more communication, explanation and encouragement than envisaged. Despite this, in some care homes, the intervention became ‘lost’. One manager, for example, was not aware that the intervention was anything other than sending

some staff for training:

...I don't think that [therapist supported care action planning/decision support tool] happened actually. And if it did, I'm not aware of it. And if I'm not aware of it (laughs), I'm a bit in the dark about that really. (Lifelong Lodge, manager)

This manager said there was no one contact point for the project, despite there being a full-time study coordinator, in post throughout, and who had regular telephone contact with all homes. In contrast, no such concerns were reported by the manager of Happy Haven, where implementation was widely understood to have progressed smoothly – here manager and care staff accepted that the research needed to evolve over time.

Another barrier to coherence was lack of communal specification, since not everyone considered they had been informed about the study or understood its aims and processes. This caused implementation problems for the homes and the research team. For the homes, the researchers' reasons for examining potential benefits from the intervention to have a positive impact on the culture of care had not been strongly reflected. Second, the initial need to boost computer and broadband provision to levels required for in-home delivery of the action care plans called for agreement and permissions from the wider organisation of which most care homes were a part, before the research could proceed. This necessitated lengthy communication with training managers, regional or national company directors, and with corporate or external IT providers.

Participation: Engaging and investing in the intervention

Barriers to undertaking the IT-based action care planning included the care home manager/senior staff member not initiating or maintaining the intervention despite their initial agreement. In some of the corporate homes, managers had been 'told to take part'. In these and others, some managers and care staff only reluctantly engaged with the research and the intervention. The leadership role of the manager was widely seen as an important factor in the implementation of the intervention. Managers seemed more likely to facilitate participation when they 'led by example'. This could be through either contributing to data collection; or more importantly but not often, by attending the training themselves.

Of the case study homes, just one manager (Happy Haven) had attended the training about the care planning intervention and had been impressed by its quality, despite prior reservations about e-learning. The two senior care workers interviewed at this home said their manager had led the implementation and conveyed its benefits. In hindsight, the managers of Careful Place and Lifelong Lodge felt that they would have benefited from the training since their staff had not generally provided feedback:

...it would have been interesting [to attend training] because I don't know what they did [...] I released them on a couple of occasions but never had any real feedback. (Lifelong Lodge, manager)

Variable support for the research raises questions about initial recruitment of homes. For homes that were part of larger corporations, initial invitations to participate had been made to head office. One researcher wondered if some directors were under the (erroneous) impression that there would be cheap improvements to care – *'so all their homes were told*

they had to be in it (Research Nurse). Others were thought to have more reputational-based motives for participation *'the ones in like say, for example, the big companies [...] I think they just thought oh, it's a big study, we must be in it because we have to you know, show that we're the cutting edge'* (Research Therapist). At individual home level, care home managers who had been *'told to take part'* were unsurprisingly thought to be more *'tokenistic'* in their participation, even with some resistance or stalling of the researchers, or being *'a bit stubborn'* (Research Nurse). Other managers, in their eagerness to access hard-to-find, free, specialist dementia care training, were felt by the research team to have signed up for the study without fully thinking through what was required for the intervention, such as IT requirements or its implications, or staffing.

Other obstacles to the commitment of managers and care staff to the IT-based intervention were concerns about care staff undertaking e-learning on computers because they could not be trusted to access the internet responsibly; scepticism about e-learning and its quality; a belief that older staff would not like to use IT and worries about data protection or governance.

Collective action: Working together to implement innovation into practice

Research records showed the many telephone calls and visits to individual care homes by the team. Requests to return calls were often not returned but some homes had policies or *'unwritten rules'* about staff not taking calls when they were busy caring for residents. A consistent problem in most homes was that some senior staff and managers found it difficult to co-ordinate sufficient staffing to support the research or the intervention. Two of the three intervention homes that withdrew from the study cited lack of time as the reason. Staff absences, shift patterns and high turnover all contributed to this most significant barrier. Staff who had been released for training or care planning with research therapists could be called away to provide direct resident care. Generally, the researchers felt that managers were unhappy with the amount of staff time needed for the research irrespective of the offer to fund replacement costs, which were, in the event, largely unclaimed. Managers found it hard to arrange safe cover from existing staff in addition to meeting their existing training requirements. Nonetheless, managers mostly appreciated the changes made to deliver the e-learning off-site and the increased availability of dementia therapist in the home to help with training and care planning.

Another barrier to implementation was that managers had sent staff to be trained as Champions who were not able or willing to take on this role. In Lifelong Lodge, only full-time staff were selected, and it took several months for them to get the time to undertake the training. In three case study homes, Champions were selected on the basis that they routinely worked with residents with dementia and had expressed an interest in taking part. However, while keen, they were junior staff, so problems arose when developing care plans since this was the responsibility of more senior staff, particularly where the individualised action was for medication management. Conversely, in some homes, staffing structures meant that senior staff had more managerial responsibilities and less knowledge of residents' personalities, life histories and care needs.

Finally, a major barrier to implementation was that staff simply lacked time to develop care action plans with the dementia research therapist, or they completed this outside their working hours. This would likely be unsustainable and potentially exploitative – *'a lot of*

people have had to do a lot of stuff in their own time, and you know, whether they're prepared to do that or not made a difference' (Research Therapist).

Reflexive monitoring: Appraising the effects of implementing the research and intervention

The changes made by the research team to adapt implementation by responding to difficulties with IT-access in homes, releasing staff for training and altering training delivery, were examples of reflexive monitoring. However, communication problems with and within the homes remained or were not able to be addressed, these included lack of feedback on the impacts of the intervention on residents from the research team to the staff, because the cRCT was on-going. The care home managers were informed of the cRCT design and that the outcomes of ResCare would be forthcoming after data analysis was complete. Nonetheless, some managers (Careful Place and Lifelong Lodge) felt 'short-changed' in not receiving some feedback sooner although another (Happy Haven) felt that on-going, informal and general feedback had occurred and was anticipating finalised conclusions later.

Positive feedback from staff who attended training was not always shared with managers although the staff who had attended the dementia therapist-assisted e-training said it had exceeded their expectations and that it was relevant, practical and uncomplicated:

I'm more of a hands-on, 'let me read it, let me do it', than having someone just sit there and go on and on and on and on for hours [...] so it kept your mind going [...] some of them scenarios that we did I just thought, 'oh, that is so like so and so where I work'. (Home Court, care assistant)

Lack of opportunities for staff to share and embed learning and to change practice was reported. All Champions valued the instant feedback of the interactive e-learning programme but emphasised the value of the dementia research therapist who assisted with the training and care planning. She was seen as 'personable' and a 'high quality trainer'. They were not enthusiastic about the impact of the care action plans, even though the intervention appeared to have prompted some observable changes. For example, Champions could provide examples of documented action plans in practice:

Just the way you calm [a resident] down and things like that, like your tone of voice... (Lifelong Lodge, care assistant)

Just things like trying to along with a resident when the resident's sort of... maybe going off on a tangent... just to listen and agree with [residents] instead of constantly battling with them. (Home Court, care assistant)

The manager at Lifelong Lodge considered that the costs of being involved in the research had outweighed any perceived benefits. Not surprisingly this manager prioritised other mandatory training since not doing this could negatively affect the home's registration and viability. Only the Happy Haven manager gave any positive feedback on the perceived impact of the care plans amongst residents; describing the intervention as complementing and deepening their approach to individualised care.

Discussion

This IT-based intervention was developed to help care home staff provide individually tailored care for residents with clinically significant challenging behaviours. This process evaluation of how the intervention may be embedded in a care home, sought to gain a deeper understanding of the contexts within which the interventions were delivered so as to identify mechanisms, barriers and facilitators to inform future practice and research. The expected mechanism of change were the '*ways of thinking and acting*', of care home staff and not introducing new organisational systems into care homes, although in practice to achieve action care planning online did require system change. This evaluation highlights the serious limiting factors and understandings that were encountered during implementation by both the care homes and also by the research team. These may inform future delivery of individualised interventions in care homes. First, barriers to coherence and how staff made sense of and engaged with the intervention highlight the importance of preparatory and on-going work when involving autonomous care homes in innovation and research. Their 'thirst' for training perhaps overshadowed the implications of also engaging in action care planning. Second, barriers to participation and staff investment in individualised interventions suggest a need for managers to be given more opportunities to address concerns about the innovation within their homes. Third, the barriers to collective action in undertaking intervention research in care homes reveal the importance of anticipating the work needed in both conducting research and implementing an innovation. Timely anticipation of such work and preparation for it may reduce the considerable delays we encountered. Fourth, while the initial implementation barriers were addressed to some extent, there was substantial time-lag in delivery of the care action plans. This had a 'knock on' effect in reducing the time available to support homes to adapt to action planning for residents with identified challenging behaviour, and so undermined how far the intervention could be embedded.

Our analyses of barriers to implementation in case study homes suggest that broader changes in the delivery of care were never likely to be fully realised, given the relatively low levels of external skilled support to help staff to deliver this IT-based online intervention amid multiple care home pressures. This highlights the importance of timely consideration of the hidden extra work that may be necessary for psychosocial interventions in care homes. In line with other research (Lawrence, Fossey, Ballard, Moniz-Cook, & Murray, 2012), we found that to effect change, particularly in larger homes, a critical mass of senior staff across all shifts needs to be available, trained and offered on-going support to promote the intervention. This would necessitate a major and sustained investment in training and support in the care home sector (see Burtney, Teahan, Figgitt, Buchanan, & Stevens, 2014).

Efforts to identify the salient features for constructing a typology of care homes produced a useful framework to evaluate the implementation of the intervention and helps meet the call of Goodman et al. (2017) for the care home context to be considered during study design stage. The difficulties in building a collective understanding of, and investment in, the intervention, and its research processes, that the process evaluation identified, all present challenges to future care home trials. Managers of care homes had many other demands on their time, such as high staff turnover, staff illness, part-time working, in addition to fluctuations in resident needs. With the benefit of hindsight, maintaining coherence and investment over the timeframe of the research could have been addressed further. Some of the changes made by the research team worked well, such as in ensuring that staff training (off-site) was not interrupted by staff being called back to the frontline of care. This is congruent with the

findings of Surr et al. (2017) that interruptions affect training effectiveness. Nonetheless, managers still found it difficult to arrange cover for resident care as, unsurprisingly, under continual pressure, they could rarely release and support staff for training and care action planning. These changes also meant that homes could not themselves embed the e-tools within practice. Managers are central to 'organisational readiness' to implement interventions in care homes. Our findings suggest that organisational readiness for successful implementation requires managers to be in perhaps the idealised position of having: an open attitude; ability to exercise some autonomy; a stable and sufficient workforce and; a willingness to engage in research and service improvement. However, care home managers' work is intensive and often unpredictable, and there are substantial vacancies in such managerial posts in England (Orellana, Manthorpe, & Moriarty, 2017). They, therefore, may require support and incentives from several quarters to successfully implement innovative interventions. Future research could ask them what form such support might take. Implementation of individualised interventions was also easier to achieve in smaller homes and in those with less hierarchical structures and more facilitative managerial styles. It remains to be seen if such initial engagement can be sustained and what may foster this.

Finally, supporting reflexive monitoring of the intervention, such as by sharing research outcomes with care homes during its implementation, would have risked biasing the study findings. The constraints imposed by cRCT designs in the real world of care homes need to be considered in future studies. The lack of perceptions of benefit from an intervention, as noted by others (see Lindgren, 2011), highlights reasons for this and is an important feature to address in future research on service improvement innovation.

Limitations

We acknowledge that the time-lag between the period of intervention delivery and the later implementer-participant interviews may have increased inaccuracy or gaps in recall in their accounts. However, we also drew on observational and documentary data that had been collected during the conduct of the cRCT by the researchers. In selecting and recruiting the case study homes, some specific local contexts may have been overlooked. As with many other users of NPT, we missed the fuller perspectives of residents (or their proxies) who received the intervention, and those of staff who did not attend the training or left before the full trial. Given the difficulties involved in interviewing staff who were actively involved in the study to discuss implementation, contacting these others was not possible.

Conclusion

Care homes recruited to this cluster RCT were initially keen to access dementia training for their staff that might help in the management of behaviour that they found challenging, and they highly rated the quality of the e-learning. Yet the benefits of a new individualised approach, action care planning, to help staff with these challenges were not sufficiently evident. The intervention was not easy to embed in the care homes, because the staff resources and specialist therapist time needed to support Champions and other staff were underestimated. Leadership and management, home size, sector changes and instability, and pressures (including staff turnover) also impacted on organisational readiness for engaging with and implementing the research. While National Institute for Health Research (NIHR)

initiatives such as ENRICH (Enabling Research In Care Homes – www.enrich.nihr.ac.uk/), may strengthen their readiness, care homes settings will likely remain a context in which implementing complex interventions is not straightforward if these are externally prompted and not internally engaged with sufficiently. Understanding the delicate and often shifting local contextual cultures of the care home (Goodman et al., 2017) may help reduce barriers to implementation. Our use of NPT to identify ‘real’ and ‘ideal’ conditions for implementing innovation may prove useful to other researchers and service improvers who seek to deliver and sustain psychosocial interventions within routine practice in care homes.

Authors’ Contributions

FP designed the process evaluation study in consultation with EMC CH, JM and JK. JK collected data and analysed this with FP. Analysis process and interrogation and significance of findings were discussed and refined by EMC, CH, JM, FP, and JK. JK and JM developed the manuscript in collaboration with FP, and EMC who reviewed the manuscript and made recommendations for changes and additions. EMC, JM and CH developed the background section.

Acknowledgements

We thank the many people who assisted in data collection referred to in this paper. We are grateful to all the wider ResCare research team, care home staff and residents who participated in this study and the study’s Advisory Group.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This paper presents independent research funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research (RP-PG-0606–1067). The views and opinions expressed in this publication are those of the authors and do not necessarily reflect those of the National Health Service (NHS), the NIHR or the Department of Health and Social Care.

Ethical Approval

Ethical approval for ResCare was obtained from York Research Ethics Committee of the National Research Ethics Service (reference number 09/H1311/). In line with other parts of the trial, data reported here were collected with informed consent and participants were assured that their names and locations would be anonymised.

ORCID iD

Jill Manthorpe  <http://orcid.org/0000-0001-9006-1410>

References

- Bamford, C., Heaven, B., May, C., & Moynihan, P. (2012). Implementing nutrition guidelines for older people in residential care homes: A qualitative study using normalization process theory. *Implementation Science*, 7, 106.

- Beer, C., Horner, B., Almeida, O. P., Scherer, S., Lautenschlager, N. T., Bretland, N., ... Flicker, L. (2009). Current experiences and educational preferences of general practitioners and staff caring for people with dementia living in residential facilities. *BMC Geriatrics*, 9, 36. DOI: 10.1186/1471-2318-9-36.
- Burntney, L., Teahan, D., Figgett, D., Buchanan, P., & Stevens, K. (2014). *Models of change in care homes*. Leeds: Skills for Care & Thomas Pocklington Trust.
- Dickinson, C., Gibson, G., Gotts, Z., Stobbart, L., & Robinson, L. (2017). Cognitive stimulation therapy in dementia care: An exploration of barriers and facilitators to implementation in practice using normalisation process theory. *International Psychogeriatrics*, 29, 1869–1878.
- Feast, A., Moniz-Cook, E., Stoner, C., Charlesworth, G., & Orrell, M. (2016). A systematic review of the relationship between Behavioural and Psychological Symptoms (BPSD) and caregiver well-being. *International Psychogeriatrics*, 28, 1761–1774. DOI: 10.1017/S1041610216000922.
- Goodman, C., Sharpe, R., Russell, C., Meyer, J., Gordon, A., Denning, T., ... Bunn, F. (2017). *Care home readiness: A rapid review and consensus workshops on how organisational context affects care home engagement with health care innovation*. London: NHS England. DOI: 10.18745/pb.18200.
- Hobday, J. V., Savik, K., Smith, S., & Gaugler, J. E. (2010). Feasibility of Internet training for care staff of residents with dementia: The CARES program. *Journal of Gerontological Nursing*, 36, 13–21. DOI: 10.3928/00989134-20100302-01.
- Holle, D., Halek, M., Holle, B., & Pinkert, C. (2017). Individualized formulation-led interventions for analyzing and managing challenging behavior of people with dementia – an integrative review. *Aging Mental Health*, 12, 1229–1247. DOI: 10.1080/13607863.2016.1247429.
- Irvine, A. B., Billow, M. B., Gates, D. M., Fitzwater, E. L., Seeley, J. R., & Bourgeois, M. (2012). Internet training to respond to aggressive resident behaviors. *Gerontologist*, 52, 13–23. DOI: 10.1093/geront/gnr069.
- Lawrence, V., Fossey, J., Ballard, C., Moniz-Cook, E., & Murray, J. (2012). Improving quality of life for people with dementia in care homes: Making psychosocial interventions work. *British Journal of Psychiatry*, 201, 344–351.
- Lindgren, H. (2011). Towards personalized decision support in the dementia domain based on clinical practice guidelines. *User Modeling and User-Adapted Interaction*, 21, 377–406.
- May, C. (2006). A rational model for assessing and evaluating complex interventions in health care. *BMC Health Services Research*, 6, 86.
- May, C., Finch, T., Mair, F., Ballini, L., Dowrick, C., Eccles, M., ... Heaven, B. (2007). Understanding the implementation of complex interventions in health care: The normalization process model. *BMC Health Services Research*, 7, 148.
- Moniz-Cook, E., Hart, C., Woods, B., Whitaker, C., James, I., Russell, I., ... Manthorpe, J. (2017). Challenge Demcare: Management of challenging behaviour in dementia at home and in care homes: Development, evaluation and implementation of an online individualised intervention for care homes; and a cohort study of specialist community mental health care for families. *Programme Grants Applied Research*, 5, 15.
- Moniz-Cook, E., & James, I. (2017). Behaviour that challenges in dementia care: An update of psychological approaches for home and care home settings. *Psychology of Older People: The FPOP Bulletin*, 140, 43–49.
- Moniz-Cook, E. D., Swift, K., James, I., Malouf, R., De Vugt, M., & Verhey, F. (2012). Functional analysis-based interventions for challenging behaviour in dementia (2012). *Cochrane Database of Systematic Reviews*, Issue 2. Art. No.: CD006929. DOI: 10.1002/14651858.CD006929.pub2.
- Orellana, K., Manthorpe, J., & Moriarty, J. (2017). What do we know about care home managers? Findings of a scoping review. *Health & Social Care in the Community*, 25, 366–377.
- Prince, M., Knapp, M., Guerchet, M., McCrone, P., Prina, M., Comas-Herrera, A., ... Salimkumar, D. (2014). *Dementia UK: Updated*. 2nd ed. London: King's College London and the London School of Economics for the Alzheimer's Society.

- Ramsay, C. R., Thomas, R. E., Croal, B. L., Grimshaw, J. M., & Eccles, M. P. (2010). Using the theory of planned behaviour as a process evaluation tool in randomised trials of knowledge translation strategies: A case study from UK primary care. *Implementation Science*, 5, 71.
- Ritchie, J., & Lewis, J. (Eds). (2003). *Qualitative research practice: A guide for social science students and researchers*. London: SAGE.
- Ruiz, J. G., Mintzer, M. J., & Leipzig, R. M. (2006). The impact of E-learning in medical education. *Academic Medicine*, 81, 207–212.
- Surr, C. A., Gates, C., Irving, D., Oyebode, J., Smith, S. J., Parveen, S., ... Dennison, A. (2017). Effective dementia education and training for the Health and Social Care Workforce: A systematic review of the literature. *Review of Educational Research*, 87, 966–1002.
- van Duinen-van den Ijssel, J. C. L., Ajmij, S. M., Zwijsen, S. A., Appelhof, B., Zuidema, S. U., ... Koopmans, R. T. C. M. (2018). Nursing staff distress associated with neuropsychiatric symptoms in young-onset dementia and late-onset dementia. *Journal of the American Medical Directors' Association*, 19, 627–32.
- Yarbrough, A. K., & Smith, T. B. (2007). Technology acceptance among physicians: A new take on TAM. *Medical Care Research Review*, 64, 650–672.

Dr Julia Keenan is a research fellow at the Centre for Research on Children and Families in the School of Health at the University of East Anglia. She has undertaken research in the NHS, social care, public health and educational arenas with additional experience in Patient and Public Involvement.

Fiona Poland is professor of Social Research Methodology at the University of East Anglia and Editor of *Quality and Ageing and Older Adults*. She is a sociologist and community researcher and engages in a wide variety of research with older people and carers in health and social care services, policy and practice.

Jill Manthorpe is professor of Social Work at King's College London and Director of the NIHR funded Health & Social Care Workforce Research Unit. She is an NIHR Senior Fellow Emeritus and undertakes a wide variety of studies of dementia care policy and practice.

Cathryn Hart is assistant director – Research & Development at Humber Teaching NHS Foundation Trust. She managed the NIHR programme Challenge Demcare and the ResCare study.

Esme Moniz-Cook is professor of Clinical Psychology, ageing and dementia care research at the University of Hull. She had more than 30 years' experience in psychosocial intervention research and practice in dementia care and was Chief Investigator for the NIHR programme Challenge Demcare and the ResCare study.