ISSN 2059-3341

East Midlands Research into Ageing Network (EMRAN) Discussion Paper Series

ISSN 2059-3341

Issue 2, June 2015

Chair based exercise: a survey of care homes in Nottinghamshire

Robinson K[1, 2], Gladman J[1, 2], Masud T[3], Logan P [1, 2] and Hood V [4].

East Midlands Research into Ageing Network (EMRAN) is a research collaboration across the East Midlands to facilitate collaborative applied clinical research into ageing and the care of older people. EMRAN was set up with support from NIHR CLAHRC East Midlands.

Address for correspondence: Katie Robinson, B109 Division of Rehabilitation and Ageing, Medical School, University of Nottingham, Queens Medical Centre, NG7 2UH Email: katie.robinson@nottingham.ac.uk

Author Affiliations:
1. Division of Rehabilitation and Ageing, University of Nottingham
2. CLAHRC East Midlands
3. Health Care of Older People, Nottingham University Hospitals NHS Trust
4. Division of Physiotherapy, University of Nottingham

Introduction

Older people are advised to carry out one hundred and fifty minutes of physical activity a week in order to maximise the health benefits [1]. Achieving the recommended levels of physical activity is likely to be challenging however, and overwhelming for some older people with reduced mobility, independence and complex health needs [2]. Older people who cannot participate in exercise and activities in the standing position may be advised to carry out exercise in a primarily seated position, often referred to as chair based exercise. There is little published evidence to support the use of chair based exercise [3]. Anecdotally, chair based exercise appears to be widely used across health, voluntary, private and social sectors however there appears to be little formal data around the provision in residential care settings. Local NHS community teams provide training on chair based exercise for residential care home staff, which appears to be well received following a small service evaluation [4]. There is little known about whether care home staff apply this training and whether chair based exercise programmes are sustained. Exploring the current picture of formal physical activity and chair based exercise programmes in residential settings will help to identify key areas of need and areas for future development. The aim of this study was to investigate chair based exercise provision in residential care settings with respect to:

- Settings where CBE programmes are delivered
- Patient populations who engage in CBE programmes
- Format of CBE programmes
- Referral pathways
- Training infrastructure
- Evaluation and development of CBE programmes

Method

Managers of registered care homes for older people in Nottingham City and Nottinghamshire County (N=182) were sent a survey with a participant information sheet and a stamped addressed return envelope. The survey was developed to address the predefined study aims in discussion with the study management group. Residential homes were contacted by telephone two weeks after posting, and offered the opportunity to complete the survey by phone or a second mailout of the questionnaire. Completion and return of questionnaires was considered as informed consent. The survey was conducted in May 2013.

The survey was given favourable ethics opinion from the University of Nottingham Medical School ethics committee.

The questionnaire contained open and closed questions in the following areas:

- Demographic details
- Provision of physical activity for older people
- Chair based exercise programmes (content, delivery, training, advantages and disadvantages)
- Barriers to chair based exercise

Findings

Respondents

Results from 35/182 (19%) questionnaires were available for analysis (18 were returned after the first posting, 16 after the reminder, and one was completed by phone). Nineteen responding homes categorised themselves as purely residential (care homes without nursing), four as nursing homes, six as jointly registered, seven stated that they were dementia registered and five did not complete the question. The size of the responding homes ranged from 15-62 residents (median = 26 residents).. The number of staff employed in each home ranged from 14-90 (mean 37).

Physical activity

All 35 care homes considered that physical activity was a priority for their residents: 29 (83%) reported that physical activity was considered in individual care plans for their

residents. The reasons given for the importance of physical activity for residents are summarised in Table 1.

Table 1 Reasons cited for the importance of physical activity in care home residents

Theme	Example Quotes	
Independence	*'…maintains dignity and independence'*	*'To encourage independence…'*
Mental Well-Being	*'…promotes well-being and prevents isolation and depression'*	*'…improve well-being'*
Mobility	*'Physical activity helps keep the residents mobile'*	*'To help retain mobility'*
Sense of Purpose	*'…give them a sense of purpose'*	*'…positive self-worth'*
Strength	*'build strength'*	*'strengthens their limbs and posture'*
Reduce Falls	*'continued strength in limbs reduces falls'*	*'Promotes a safer environment by reducing falls'*
Social Benefits	*'It is enjoyable, sociable'*	*' as they interact with each other…'*

The ways in which physical activity was promoted in care homes are summarised in Table 2.

Table 2 Ways in which physical activity was promoted

Method	Frequency	Example Quotes	
Exercise groups	22	*'Those who are able sit in the lounge and have group therapy and participate in chair based exercises'*	*'Weekly exercise class'*
Encouraging mobility and walking	17	*'walks in our garden'*	*'Residents encouraged to walk to communal areas'*
Games	10	*''Games like bowling'*	*'Use of activity equipment such as balls, skittles, parachute'*
Dancing	5	*'Encouraging movement and dancing when we have entertainers'*	*'We dance with residents'*
Healthcare professional	4	*'All service users are seen by our in house physiotherapist 4 days a week'*	*'We employ two physiotherapists'*
Household activities	4	*'Folding of clothing'*	*'Some residents help within the home e.g. washing pots, setting tables, watering plants'*

The ways in which physical activity was included in care plans included using personalised activity plans, following advice from professionals such as physiotherapists and occupational therapists and in response to the preferences of residents.

Activity co-ordinators were mentioned in 26 questionnaires. The roles of activity co-ordinators ranged from co-ordinating and organising a diary to delivering activity sessions such as dancing, chair based exercise, walking and games.

Chair based exercise

Twenty eight (80%) responding care homes reported that CBE was delivered in their home and one reported it was currently being set up: all homes considered CBE to be worthwhile for their residents.

Fifteen (54%) homes delivered both group and one-one programmes, and 13 (46%) delivered group sessions only. No homes delivered purely individual resident CBE programmes.

Eight homes delivered CBE once a week, and 8 delivered programmes twice a week, 3 more than twice a week, 3 once a fortnight, 3 once a month 1 home reported delivering programmes less than once a month. One home reported running sessions based on clients wishes.

The duration of CBE sessions ranged from less than 30 minutes (N= 1) to 60 minutes (N =12): no homes reported sessions that lasted longer than 60 minutes.

Group sessions for CBE ranged between 5 and 30 participating residents. Up to 4 staff supported the sessions with 2 staff most commonly reported (range 1-4, and mode =2 in 13 cases). Twenty three (82%) homes stated that not all of their residents could take part in the CBE. Reasons given for being unable to take part included: being bed bound; personal preferences; and cognitive impairment.

Over half (n= 19) of the care home staff leading CBE sessions had been on some form of training. This comprised: CBE training delivered by the community falls team; Move More Often delivered by the British Heart Foundation; CBE training run by the local council; self-taught by the use of a DVD; and CBE training run in local community venues (provider unstated).

Where external staff were employed to deliver sessions these included: EXTEND CBE leaders (private? exercise instructor training provider); fitness instructors; volunteers; and health professional (e.g. physiotherapist working privately).

The advantages and disadvantages of CBE stated are summarised in Tables 3 and 4.

ISSN 2059-3341

Table 3 Advantages of CBE

Advantage	Supporting Statements	
Accessible	*'Available to all persons'* *'Provides a way that encourages people who wouldn't normally join activities to take part'*	*'All can take part no matter their physical disability'*
Enjoyable	*'More join in than with any other activity in the home'*	*''Residents seem to enjoy them more than the other activities'*
Specific muscle strengthening and mobility benefits	*'Specifically for movement of the limbs'*	*'Improves posture and balance'*
Safe	*'People that have always been active able to carry out the exercise safely'*	
Stimulating	*'More stimulating for residents requires them to think about their movements'*	*'Keeps the residents active and stimulated'* *'Residents become competitive and engaged to have fun'*
Challenging	*'More physical, works arms and legs'*	*'…provide a cardiovascular exercise for residents'*

Table 4 Disadvantages of CBE

Disadvantage	Supporting Statements	
Too structured	*'As it requires more structure some residents disengage, they like to dip in and out of activities'*	*'Often taught techniques are too demanding for dementia patients'* *Sessions have to be shortened because some residents lose interest'*
Perceived Effort	*'It can sometimes be off putting if a resident feels that you are going to have to work extra hard'*	*'Some residents are not able to fully participate due to their disabilities or sensory impairments'*
Staffing Levels	*'Needs lots of staff to support less physically able'*	

Discussion

This survey describes a pattern of chair based exercise in care homes that was typically weekly, usually in groups sessions of 5-30, lasting 30-60 minutes and run by a range of people from within and without the homes and with a variety of training or none. Chair based exercise in these homes was almost always within a context of physical activity having a high priority in the homes. CBE was considered to have benefits to residents, but was not applicable to all, and had resource implications.

Despite the strategies to enhance response rate (telephone follow ups, second reminder survey) the response rate (18%) was low, meaning that these findings may not be representative of the provision of CBE in general. Thus it might be expected that homes with an interest in physical activity and offering CBE were more likely to have responded and so it cannot be concluded, for example, that 80% of all care homes offer CBE, or that virtually all homes identify physical activity to be a priority.

Difficulty in defining chair based exercise has previously been identified [3] and a definition was provided in the questionnaire to allow responders to judge if their programme was considered chair based exercise.

To our knowledge this is the first published survey of CBE in Nottinghamshire care homes. A Local Exercise Action Pilot (LEAP) undertaken in Nottingham City PCT in 2002 mapped local activity provision for adults over fifty years of age [4]. Three percent of the

mapped activity was attributed to chair based exercise however the mapping exercise included activity provision across all community settings [5]. The report suggested chair based exercise is needed for more isolated and fragile adults and a lack of appropriate training is a potential barrier to implementation [5]. In the North East a similar mapping exercise was undertaken for all physical activity in adults with Two% of activity attributed to chair based exercise [6].

The findings of this survey are in broad agreement with the views of expert clinicians and academics in CBE and the field of exercise of older people as revealed by a Delphi study to establish a definition of CBE [7].

The findings of this survey imply that further research work in CBE could aim: to increase the proportion of homes and individual residents who can choose to and enjoy taking part (particularly those with cognitive impairment), to optimise and standardise training for those leading sessions; and to evaluate the balance of benefits, harms and costs of CBE. It would also be beneficial to have some clear outcomes from chair based exercise which may include improving mood and well-being, improving social interaction, and improving muscle strength. A review of the outcomes for chair based exercise requires further consideration.

Acknowledgements

With thanks to Mr Kevin Anthony (Nottingham CityCare Partnership) for his useful information regarding previous work in this area.

Funding Sources

This work has been supported by the following funding:

- Flexibility & Sustainability Funding from the former Nottinghamshire County Primary Care Trust

- CLAHRC East Midlands (Studentship to support PhD study for K. Robinson: Developing a chair based exercise programme for older people in community settings)

Competing Interests

None of the authors have any conflicts of interest which might bias this work.

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