

# Age & Dementia Friendly Gymnastics Programme

An Evaluation of the British Gymnastics Foundation Pilot



Vinal K Karania

Research Manager (Evaluation & Impact)

Research Department, Age UK

British Gymnastics Foundation

Main House, Lilleshall National Sports Centre

Newport, Shropshire

TF10 9NB

[info@britishgymnasticsfoundation.org](mailto:info@britishgymnasticsfoundation.org)

© British Gymnastics Foundation (May 2017)

## **Acknowledgements**

The author of this report would like to thank the British Gymnastics Foundation (in particular Patrick Bonner), the activity coach (Kim Hall), representatives of the participating organisations (in particular activity leads Di at Ringshill Care Home and Pearl at Hunters Down Care Centre) and older people and their friends, family and careers participating in the project who shared information for this evaluation.

## **Author**



Vinal K Karania is Research Manager at Age UK with responsibility for Evaluation & Impact. He designs, manages and carries out research evaluation in support of the Charity's objectives. He supports colleagues in the Charity and local Age UK Brand Partners to understand and develop evaluation systems and processes across delivery programmes, ensuring that appropriate methodologies are recognised and used. He can be contacted at [Vinal.Karania@ageuk.org.uk](mailto:Vinal.Karania@ageuk.org.uk) or on 020-3033-1182.



## Contents

1.	Introduction.....	6
2.	Pilot Delivery Model .....	8
3.	Research Methodology.....	10
4.	Evaluation Findings.....	12
	Did the programme improve physical, social and mental health? .....	12
	Posture & Movement.....	14
	Emotions & Memory .....	16
	Social Engagement & Quality of Life .....	18
	Did the programme results differ by type of older people supported and frequency of sessions? .....	20
	What is the learning from the delivery of the programme? .....	21
	Engaging Older People .....	21
	Session Layout and Disruptions .....	22
	Support Staff and Family & Friends .....	24
	Session Location & Time .....	25
	Session Deliverer.....	26
5.	Discussion .....	29
6.	Conclusion .....	33
7.	Addendum – Further Evidence from Post-Pilot Delivery .....	34
	Annex – Theory of Change Model.....	37
	References.....	38

## 1. Introduction

- 1.1. The British Gymnastics Foundation (BGF) is a charity set up in 2014 with a core purpose *to create opportunities through gymnastics to bring real improvements to the lives of people and communities most in need*. A core area of their work is addressing disability (including long-term limiting illnesses) – and dementia has been highlighted as a key concern for people living in the UK.
  
- 1.2. Recently, the Korean and Japanese Gymnastics Federations jointly developed an exercise programme for people living with dementia. The programme is currently being operated within care homes throughout Japan, having been backed by government funding. The British Gymnastics Foundation would like to replicate this success.
  
- 1.3. The British Gymnastics Foundation has developed a gymnastics chair-based exercise programme that it wishes to pilot before committing resources to enable it to be rolled out nationally. The aim of the pilot has been to:
  - Understand whether the programme results in improvements in terms of the physical, social and mental health and well-being of older people with dementia
  
  - Understand how the programme results differ, with different frequency of delivery and with older people with different levels of dementia participating
  
  - Understand how successful the structure of the programme is in delivery and whether improvements can be made to make the delivery more effective

1.4. This report presents the findings of the evaluation of the British Gymnastics Foundation pilot. These findings contribute to answering the questions of the pilot. Section 2 of this evaluation report describes the delivery model. Section 3 discusses the research methodology used to carry out the evaluation. Section 4 presents the findings from the evaluation. Section 5 presents a discussion of the findings, and section 6 concludes this report with a summary of the overall assessment of the success of this project in meeting its aims. Section 7, which is an addition to the June 2016 version of this report, presents the findings from a feedback form completed by care home staff in April 2017.

## 2. Pilot Delivery Model

2.1. The British Gymnastics Foundation developed a gymnastics chair-based exercise programme, founded on the programme being delivered within care homes across Japan. The programme developed has been adapted for British culture, in terms of relevance to music, social participation and adherence to structured activity for the current generation of older people in Britain.

2.2. The programme began running in November 2015 and the pilot phase ended in June 2016. The programme has been delivered in three organisations in Cambridgeshire, England. The three organisations have been:

- Ringshill Care Home, Huntingdon – at this care home two one hour sessions have been delivered on a weekly basis since 3<sup>rd</sup> November 2015. The sessions have been delivered on a Monday afternoon and a Tuesday morning
- Hunters Down Care Home, Huntingdon – at this care home a one hour sessions has been delivered weekly on Tuesday afternoon since Tuesday 10<sup>th</sup> November 2015
- St Ives Day Centre, St Ives – at this day centre a one hour sessions has been delivered weekly on Thursday morning since Thursday 5<sup>th</sup> November 2015

2.3. Each session has been delivered by the same person, and the approach has been one of inclusivity such that older people participating in the sessions are able to take part along with their spouses, family members and carers.

2.4. The delivery of each session is structured around eight core activity themes: Meeting & Greeting; Gentle Warm-Up Exercises; Facial Expressions and Arms Crossing the mid-body line; Bilaterally asymmetrical patterns; Paper, Scissors, Stone Game; Partner Working; Cognitive stimulation activity and Relax and wind down exercise.



2.5. The British Gymnastics Foundation, in working collaboration with the person delivering the sessions, designed the delivery activities to meet the requirements of the core programme<sup>1</sup>.

2.6. The programme has been specifically designed to be interactive with lots of humour and contact through partner activities, and cognitively stimulating with the use of asymmetric activities and memory evoking music<sup>2</sup>.

---

<sup>1</sup> Discussed later in this report some of the delivery activities designed at the outset evolved and changed.

<sup>2</sup> For detailed information on the delivery activities contact the British Gymnastics Foundation

### 3. Research Methodology

3.1. The aim of the evaluation of the British Gymnastics Foundation's pilot programme has been to help understand how the programme is delivered and received, whether it contributes to an improvement in the emotional, physical and social well-being of older people participating and whether the frequency of which it is delivered influences any changes observed. As a pilot that was initially envisaged to run for six months (it will run over an eight month period by the time the pilot phase ends) and attempting to deliver a new package of activities in Britain the evaluation needed to be proportionate and collect the appropriate information for this pilot phase.

3.2. For any new activity, and especially those that involve older people with varying levels of cognitive ability, it is important that any changes are both felt and observed by older people themselves and those people are close to them. It is also important that the evaluation approach chosen provides the opportunity to resolve issues that only come to the fore when a new activity is actually delivered. For these reasons a qualitative research methodology has been used to evaluate the pilot programme.

3.3. The qualitative research methodology included:

- the person delivering the activity writing a diary after each session noting how the session had gone, the things that went well and the challenges, what was changed and why, any learning for future sessions, feedback received from older people, their spouses, family members and friends or from staff at the care homes and day centre
- speaking with older people, their spouses, family members and friends and the staff at the care homes and day centre and the person delivering the activity
- attending the sessions and writing up the observations

3.4. There are 165 pages of diary material (covering the period from the first session on 3<sup>rd</sup> November 2015 to the session on 5<sup>th</sup> May 2016). There are 10 pages of observational notes from seven visits to the sessions. There is 1hr 30 minutes of recorded interviews with the person delivering the session and the residential care home staff (which have not been transcribed).

3.5. The information from each of these data sources has been analysed using a thematic framework. The information has been reviewed and coded manually before being interpreted.

## 4. Evaluation Findings

### Did the programme improve physical, social and mental health?

4.1. The older people participating in this programme all enjoyed themselves and this was evident from the atmosphere within which the sessions took place. Every session involved older people laughing and smiling and even those older people who did not wish to attend or started sessions being disruptive at some point showed signs of enjoyment. Staff at both residential care homes and the families of older people attending the sessions at these care homes all mentioned the enjoyment that was experienced by the residents. Similarly older people at the day centre talked about how enjoyable they found the sessions, and this was evident with the banter amongst those attendees who were still relatively cognitively inclined.

*“The group seemed very pleased to be back and very motivated. Lots of laughter and smiles throughout”* Session Deliverer

*“A new lady joined in last week [and] she refused to do anything...this week she did everything and kept laughing”* Session Deliverer

*“Other staff had noticed how much people were enjoying the sessions, and look[ing] forward to them”* Activity Worker

4.2. The attractiveness of this programme to older people attending was further demonstrated by their willingness to not miss a session, and for older people with more advanced forms of dementia the ability to remember that this session was to take place and what the session actually involved.

*“they always say they looking [forward] to it, when we say its gym for all or exercises they say oh we really love the exercises ” Activity Lead*

*“two residents involved were keen not to go off with their visitors...did not want to miss [class], so they got them to join in as well” Session Deliverer*

*“My other lady D who was very reluctant at the start is very motivated and keen and does everything. The activity worker said it is the only session of the week she comes out of her room for” Session Deliverer*

*“Comment from reception staff today to say how popular the exercise class is...they said it was more popular than any other group in the week” Session Deliverer*

## Posture & Movement

4.3. The older people participating in this programme all suffered from poor posture and varying levels of limitations in their movement. This is not unexpected given the cohort of older people participating in this programme. There has been a noticeable change in the posture and movement of those participating in the programme. They are better able to sit in their chairs and have greater movement when they carry out exercises.

*“Improved posture through the session, very few now cross their legs...most can now tilt pelvis forward rather than slump”* Session Deliverer

*“Cannot believe how well people are sitting and moving... and awareness of posture improving all the time...confidence in moving on the chair improving as sitting balance improving”* Session Deliverer

*“Thinking back at the start when her balance was so poor she couldn’t safely sit on a dining chair to exercise. She spent the first few weeks reassuring herself by holding onto the chair”* Session Deliverer

*“My gentleman P who needs 1:1 managed to say the alphabet, click his fingers, clap, push, pull...little by little he does little bits of the class”* Session Deliverer

4.4. The amount of change in posture and movement for each older person participating has varied with some older people showing more noticeable improvement. A staff member at one of the residential care homes has noticed that one lady is walking better, and that another lady is now beginning to use her fingers when eating which has meant that she is eating more. At the day centre one older person had very limited use of her hands, not knowing what to do with them, and now that person is beginning to use them more and engaging in activities involving hand dexterity movements.

4.5. Some older people are also showing greater movement when carrying out the exercises with some mentioning that such movements have become easier over time. Staff and family members have noticed improvements in movement, and how much better some older people look and appear to move.

*“We had a lady last week who has to be put on a wheelchair and wheeled and we found her half way up the corridor in her wheelchair; she doesn’t usually and hasn’t done that before, obviously feels fitter” Activity Lead*

*“One lady who usually has to be physically moved to join in carried out lots of actions herself today” Session Deliverer*

## Emotions & Memory

4.6. The older people participating in the programme had some form of cognitive decline, with many having early stage to advanced levels of dementia. Some of these older people also had other health conditions. The differing levels of cognitive ability also meant that older people varied in terms of their ability to remember and control their emotions. Many of these older people appeared to benefit from the programme with staff observing that many older people who have poor memory remembered the sessions, and talked about it during the week when the session did not run.

*“There is [a person] who that morning went to their daughters funeral and in the afternoon didn’t know she had died but they are remembering the exercise class and remembering the next exercise before they get to it”* Session Deliverer

*“One lady who the first few weeks joined in nothing is really easily distracted and quite lost...today at two points she began to carry out the next exercise in the session whilst we were completing the one before”* Session Deliverer

“one thing that I have felt is different is they remember that particular class whereas previously very difficult remembering anything...can think of two in particular that regularly go...they will remember sequences of the exercise class and they can link it to a particular song that they heard when they were doing that...for these two in particular they cannot remember 5 minutes previous, their dementia is advanced”

Residential Manager

*“through the week as well and they remember things so as they are talking about it they will be lifting their legs or doing arms motions or they will be doing the tennis motions so they say that through the week when the course [is] not taking place that day.”*

Residential Manager



*"One man who is in dementia nursing saw me today and put his hands up to his eyes to play the silly game I make them play. He had only been to the class twice before"*

Session Deliverer

*"One gentleman with Parkinson and dementia who doesn't always attend came today. He arrived spelling out his name using the alphabet song symbols"* Session Deliverer

4.7. The person delivering the session also observed that older people who may be negatively emotional, and staff think will not be in the right place to participate, have participated in the exercises and have afterwards commented on feeling better.

*"One lady very upset all weekend and came very angry...enjoyed pretending to throw a ball to me and catch. Suddenly happy and joined in whole session, smiling and relaxed".*

Session Deliverer

*"Another lady said she had felt so down before the class, but had had an hour of wonderfulness and felt so much better"* Session Deliverer

## Social Engagement & Quality of Life

4.8. The older people participating in the programme appeared to develop a bond between them, providing encouragement and support to each other. This was especially the case at one of the residential care homes where participants were able to socialise after the activity, with lunch one day and tea the other being provided to them in the area that the session took place. This helped older people who would not normally have the opportunity to mix with other residents in the same home.

*“Some people who wouldn’t usually stay for lunch do...they usually have their lunch in their room but if they’ve been to the exercise class they’ll stay on and have their lunch. We have a full dining room.”* Activity Lead

“There seems to be a bond developing between the groups. One lady reminds the one next to her to uncross her feet” Service Deliverer

“One lady cried as her daughter left, she was supported by the group” Service Deliverer

“In alphabet song we stood in a queue for letter Q I asked what we were queuing for, and one lady said to see the Queen. We had a chat about getting an MBE and what to wear” Service Deliverer

4.9. For some older people participating in the programme the difference observed by staff and family members is of these older people reengaging with life. Many staff and family members report older people who seemed withdrawn beginning to engage and showing signs of enjoyment.

*“My mum...what a difference this has made. She is more...able to use her hands...mentally she is much better. She thinks [it] is great because she is always having a laugh...she was sorry she had to miss it today because she had to go to an appointment to the hospital”* Family Member

*“Lady who has progressed so much was just like a normal person talking...found out today she has a south African accent as she was chatty throughout the class...would not believe she is the same person”* Service Deliverer

*“as people get older the mobility goes and its, its only when this has been going for week after week after week you do actually see the people being able to get a bit more mobile. Because of their age you think they should do that anyways but lots of them can't. But gradually like [name of older person removed] she's gone a bit further...and in the self the wellbeing it makes them lot happier to face life”* Family Member

*“Her mum had given up, become withdrawn, cut off, stopped communicating, been asleep, not moving, connecting with them...now socialable, chatting, laughing, connecting, smiling, laughing, moving”* Service Deliverer

*“We have noticed such a difference in people's cognition, their movement and mobility and they are also such fun sessions which the residents love”* Home Manage

## **Did the programme results differ by type of older people supported and frequency of sessions?**

- 4.10. The programme was delivered in three settings, which provided participants with varying levels of cognitive ability. In one of the care homes it was also delivered twice a week. This variation in the delivery of the programme, which was delivered by the same person across all three settings, provides a useful insight into how it has been received by different types of older people and the benefits of greater exposure to the programme.
- 4.11. The programme was found by some older people, who were at early stages of dementia, to be patronising because they felt it was too babyish. However, many of these older people were not able to carry out the actions as demonstrated by the person delivering the session although they thought they were. Nonetheless many older people, including family members who attended with their spouses, found the sessions beneficial by providing them with activities to keep them moving which were also socially engaging.
- 4.12. By the nature and design of the programme those older people with dementia appeared to get the most from the sessions. In the residential care home where the session was delivered twice weekly the progression was noticeably quicker than in the other two settings. Those older people who were more able managed to pick it up quicker, although some elements such as the asymmetric movements continued to pose a welcome challenge.

## What is the learning from the delivery of the programme?

4.13. The delivery of this programme in three settings that had different working cultures and attitudes provided a richness of information on the aspects of the programme that if in place could improve the experience of older people participating and the benefit that they gain from participating.

### Engaging Older People

4.14. The programme has been popular amongst older people attending the sessions but one of the challenges that staff at the residential care homes have raised is the issue of attempting to convey what the programme involves. The use of the word exercise is not an accurate reflection of the entirety of the programme and leads to some older people having a view of the programme that is different from the reality. This is because of what the word exercise is associated with in people's minds. Some older people commented that they already do exercise and then found when attending that it is entirely different to their concept of exercise. One staff member at one of the residential care homes said *"we call it gym for all here in the home...they think they are doing gym you know rather than what we are doing; it should have more of a fun title I think to encourage them to come but once they are here and realise what it is they're fine...two men in particular very reluctant, no its not for me not for me I do enough exercise, but when they came[I] just said just sit and watch and then they joined in "*

Lesson: A fun title, and one that provides a more accurate reflection of what is involved, for the programme is important to encourage older people to attend

4.15. In the care homes it can also take half an hour to get everyone into the location of the session and at times older people who have regularly attended have been reluctant to attend when called for by the activity lead. However the older people have then attended when the person delivering the session has come to call them. In one care home care staff and cleaners have been found going room to room to encourage older people to attend. This suggests that the more people that can be involved in helping to get older people to the location of the session the more likely older people will attend. It will also reduce the time that older people are waiting before the session begins, although this is an opportunity to socialise, and one care home offers cups of tea in the location so older people arriving early can have a drink and socialise.

Learning: The more staff that can help take older people to the location of the session the more likely older people will attend, and providing tea before the session begins at the session location can help encourage older people to come and socialise

Learning: One of the duties of the person delivering the session may involve rounding up older people to attend, especially those who are reluctant but have previously attended

### **Session Layout and Disruptions**

4.16. For many older people participating in this programme the ability to carry out the activities demonstrated involves, at least in the initial stages, mirroring the person delivering the session. This therefore requires older people to be able to see the person delivering the session and for this person to see all the older people to identify those who may need some further help or support. A semi-circle group appears to be the most effective layout for achieving this.

4.17. Some of the activities require moving from one side to another and the experience of delivering these sessions in the three settings shows that there needs to be sufficient space between older people to avoid them hitting each other. The use of smaller chairs without arms (for older people not in wheelchairs) also appear to be required to both help with posture and balance when sitting and also the ability to move side to side without hitting the chair.

Learning: Have older people sit in a semi-circle on smaller chairs without arms that are appropriately spaced to avoid participants hitting each other when moving side to side

4.18. At one of the care homes and the day centre, the sessions at the early stages of the pilots were disrupted with people walking through the sessions or sitting in a corner making a noise, coming in to provide drinks or medication or to take older people from the session to another appointment (e.g. with the hairdressers). At the other care home this was not an issue with the session running from start to finish with little, if any, interruption. As the pilot programme progressed participants were less distracted by these disruptions but nonetheless, for those with more advanced dementia, the need to on occasions stop the flow of activities can mean losing focus and becoming disengaged. It also leads to older people wanting to participate in the session sometimes being taken for another appointment when they would like to remain. This suggests that better planning by care home staff could minimise these disruptions, as happened in the one residential care home with the session start time being pushed back so that drinks can be provided before the session began.

Learning: Residential care home staff should plan provision of drinks and appointments for those attending the sessions to take place before or after the session

## Support Staff and Family & Friends

4.19. The layout of the room is important to enable older people to mirror the person delivering the session and for some older people, especially those with more advanced forms of dementia, one-to-one support is required to help them make the required movements. Staff members, who need to be able to carry out the movements, participating in the sessions is valuable as it enables the person delivering the session to provide one-to-one support and still have someone at the front of the class carrying out the motions so other older people can mirror. Some of these staff members can also provide one-to-one support as required which can enhance the experience for many older people.

Lesson: The more staff that can attend the session the more opportunity it provides to support older people with one-to-one engagement

4.20. Family and friends can also provide the one-to-one support for their loved ones and it has been noticeable that during activities requiring partner work older people have enjoyed the human contact and these activities have *“especially worked well with [a] family member being their partner.”*

Lesson: Encouraging friends and family members to attend sessions can enhance the experience for the older person, especially during activities requiring partner working



## Session Location & Time

- 4.21. One of the benefits of this programme for older people participating appears to be one of being able to socialise, especially for those residents of care homes who are in a dementia or nursing unit and so do not either have the opportunity or are not inclined to leave their rooms. In this pilot programme one residential care home provided tea before the session began and held the session in the dining area so that after the session residents could stay to have lunch together. This staff member observed this led to some older people who would normally have their lunch in their room having it in the dining room, providing them the opportunity to be out of their room and to socialise with other residents.
- 4.22. The location of the activity, in addition to providing the opportunity for older people to socialise, appeared to be important in engaging other staff members and providing other visitors with an insight into the activity. The residential care home that held the sessions in the dining area appeared to benefit from all staff – including the cleaning and kitchen staff – being able to see what the programme was as they walked past the room. This benefit is seen by how cleaners have helped remind older people that the session is about to start and how kitchen staff have participated by encouraging older people to carry out an action. Older people walking by the room also have the opportunity to see what the session is about.
- 4.23. With the dining room being in an area where management talk and external visitors like GPs sit, it provided a glimpse to the outside world of what the activity involved. One GP visiting even observed and smiled as he walked past the session.

Learning: Hold sessions in a space that is accessible and at a time that enables tea or lunch to be served after the session in the same location enabling the opportunity for attendees to stay and socialise

## Session Deliverer

4.24. Older people attending the sessions and staff members at the two residential care homes all had praise and positive comments about the person delivering the session, and to some extent – perhaps even more than the programme content – the connection and continued engagement of older people in the programme pilot was driven by this one person. It should be noted that at the outset the person delivering the sessions was sceptical commenting that *“It sounded great but I wasn’t sure, the claims were really big you know and although I knew it would be of benefit for people to exercise I didn’t really believe that we [would] get the progression we are seeing. I was sceptical in a way.”*

4.25. The dedication of the person delivering the session was evident by her remembering the older people’s names, taking the time to speak to each of them individually and when required going around one of the care homes to encourage older people to attend. This person also commented on the need for those leading a session to have confidence, be a performer and have some medical and anatomical knowledge. This last point was evident in the few sessions that were delivered by the activity workers who felt that without this knowledge they were not comfortable in knowing how much they could push someone to carry out a motion.

Learning: Person delivering the programme needs to be confident, a performer and have sufficient medical and anatomical knowledge to be comfortable in working with older people with varying levels of cognitive and physical limitations

4.26. The pilot programme has shown that every individual can be engaged with at least some aspect of the programme and that the key is to be patient and identify that aspect which helps connect with an older person. One gentleman who joined the programme was angry that the person delivering the session sat beside and talked to him before the session began, and throughout the session sat there not participating, until the music at the end when he began singing and tapping his feet. The need to be patient is also demonstrated by some older people taking weeks before any progress is shown with the session deliverer saying *“Someone new...I think we can really engage with that person and I’m finding we are but it may just take three or four weeks or even longer...lady at [care home name removed] doing lots now but been going since September but she is just beginning to start moving”*

Learning: Person delivering the programme needs to be patient and have the determination with continuing with the programme even when progression is limited

4.27. Being able to adapt activities within the programme also appears to be important. *Rock, scissors, papers* (*‘Jan-ken-Pong’*) is an integral part of the programme (with cultural significance) in Japan but for the older people participating in the programme in the UK, it is not a game that they are aware of and struggled to understand. This activity was adapted by the person delivering the session to be of more relevance culturally by bringing in two dice and splitting the room into two teams with each team rolling the dice, with the highest score being the winning team. Over time the person added in an activity to add and then multiply the two dice numbers together. Similarly one of the asymmetric activities requiring one hand to draw a line as the other hand draws a triangle was very difficult; so the triangle part of it was changed to a circle. This helped maintain a challenging activity with the same goal but something that may be more manageable.

Learning: Need to have several activities for each element of the programme and have the desire and willingness to continue with the programme over a period of time

4.28. The fact that the person delivering the session was not a member of staff also appears to be important with one care home staff member commenting that *“if this turned round and they said I am going to be doing this ...I don’t think you will get as many come to it”* which is borne out in attendance figures. The sessions that were run by the activity leads did have lower attendance. As one activity worker commented it is that older people perceive *“that’s different that’s new so they all want to come to it... they enjoy what we do and its obviously different because they see me Mondays to Friday...have [to have] someone...come through the door to keep it going and full”*

Learning: Having the person delivering the session being someone who is not part of the home may attract more older people to attend session

## 5. Discussion

- 5.1. The British Gymnastics Foundation developed a gymnastics chair-based exercise programme that has been piloted in two residential care homes and one day centre. The pilots began in November 2015 and were scheduled to run for six months, a period that was extended by two months until the end of June 2016 to help with the ending of the delivery phase of the pilot.
- 5.2. The programme was based on an exercise programme developed by the Korean and Japanese Gymnastics Federations for people living with dementia. The British Gymnastics Foundation has taken the core principles of this programme and adapted it for British culture, in terms of relevance to music, social participation and adherence to structured activity for the current generation of older people in Britain.
- 5.3. The programme has been specifically designed to be interactive with lots of humour and contact through partner activities, cognitively stimulating and memory arousing with the type of music used and the use of asymmetric activities, and to help improve core strength and the full use of the upper body including shoulder movements, arm movements and hand and finger movements. The programme has also evolved to incorporate the use of the feet, and the lower legs for those with greater physical ability.
- 5.4. The programme is a novel programme in Britain and is different to its namesake of chair-based exercise. The focus of the programme is one of integrating the physical, cognitive and social elements to achieve a single goal for people with dementia, with each activity being assigned a specific music that is both action based and also memory evoking.

- 5.5. Through the use of observational research methods, speaking to older people participating in the activity and their family and friends, the staff at the two residential care homes and the day centre and the person delivering the session and reviewing her diary of each session it is evident that older people participating in this programme have shown a demonstrable improvement with aspects of their physical, emotional and cognitive ability. Different older people participating have had different levels of physical and cognitive impairment, with older people having mild to advanced forms of dementia appearing to benefit the most. The one aspect that is coming through as constant for everyone is the enjoyment of participating in the sessions and real bond that develops between the older people.
- 5.6. Based on these subjective measures of outcome it is clear that older people participating in this programme have shown improvement. The question this leads to is to what extent the improvement can be placed on the programme. It is known that for many of the older people participating, their external environment has not changed significantly and therefore one can be relatively confident that much of the improvement will have been because of this programme. It is however something that would benefit from being tested further.
- 5.7. There is also one other question that the improvements observed through the subjective measures of outcomes lends itself to. The current research in this field shows that subjective measures of improvement are not always present in objective measures of cognitive function, and therefore it may be of interest to understand whether observed improvements are actually reflected in objective measures. The importance of this depends on the primary purpose of programme, and whether it is to improve actual functionality or to improve the well-being and quality of life of older people with dementia.

- 5.8. The observed improvements are likely to not be as great as they could potentially be based on the learning that is being drawn from the pilot in how the programme could be more effectively delivered. The most interesting of these is the learning that many older people with greater levels of dementia benefit from one-to-one support in carrying out the activities of the programme. This requires there to be sufficient support – whether that be from activity workers, care staff, volunteers, friends and family – to enable one-to-one support either by the person delivering the session or this extra support (who also then need to be able to carry out the actions themselves). A further possibility is to carry out the programme in the dementia unit for those with more advanced dementia but there appears to be a real value of bringing these older people out from the unit and mixing with other older people.
- 5.9. A group of older people with a mix of cognitive ability has not shown to be unmanageable and having these sorts of group in a semi-circle with the person delivering the session at the front and the support staff next to this person would improve the delivery of the programme. The support staff can continue to carry out the actions that older people mirror and those needing one-to-one support can then be supported by the person delivering the session or other support staff.
- 5.10. Encouraging staff to observe the sessions and understand what is involved is a positive, and helps them encourage older people to join if they themselves see the value. It does take time in the residential care homes to get all the older people wishing to participate in one place and the more staff that see the value in the programme the more they may help with getting older people to the place in which the session is delivered. Holding the session in an open and accessible area is beneficial in that people can see what is happening and drop in if they wish.

5.11. Delivering the session requires a certain type of individual. It helps if this individual is confident and a performer and someone who is engaging and enthusiastic and is able to be both patient and silly. Alongside these characteristics, the individual would benefit from having or being able to absorb medical and anatomical knowledge and knowledge of how to engage with people with different types of cognitive diseases. The person delivering the sessions during the pilot is someone who trained and worked as a physiotherapist and has experience providing various classes to groups of people with dementia, parkinsons and other cognitive diseases.

5.12. The evidence gathered as part of this evaluation supports the view that this programme does provide physical, emotional, social and cognitive benefits to older people participating especially to those with greater levels of dementia. It also shows that the delivery of the programme can be improved. The two residential care homes wish to continue with the programme based on the improvements they have seen, and with two-thirds of residents in care homes having diagnosed dementia, this is promising. However the residential care homes are not in a position to fund for someone to come and deliver weekly sessions.

5.13. Therefore the scaling up of the programme would require external grant funding. It would also require the development of a package of training (including medical and anatomical knowledge and knowledge of engaging with people with different forms of cognitive diseases) and materials (including the programme with three or four activity options for each element and the associated music to play). A mechanism would also need to be put in place to quality assure those delivering the sessions and for them to provide ideas and feedback for development of the programme.



## 6. Conclusion

- 6.1. The British Gymnastics Foundation gymnastics chair-based exercise programme has shown to have a demonstrable benefit in the physical, emotional and cognitive aspects of older people. Those older people having mild to advanced forms of dementia appear to benefit the most. The opportunity to socialise has been a successful aspect of the programme. The learning from the programme has evidenced a number of factors that can help improve the effectiveness and experience of the programme for older people.
- 6.2. For many of the older people participating, their external environment changed little and one can therefore be confident that much of the improvement observed will have been because of this programme. This is one aspect that will however benefit from being tested further, alongside developing an understanding of why the programme is leading to the changes being observed.
- 6.3. The programme is novel in Britain and is different to its namesake of chair-based exercise. The focus of the programme is one of integrating the physical, cognitive and social elements to achieve a single goal for people with dementia, with each activity being assigned a specific music that is both action based and also memory evoking. For this reason scaling the programme beyond the pilot phase will require the development of materials, including programme content and associated music, to train individuals to be able to deliver the programme. It will also require thoughtful consideration of the types of individuals required to effectively deliver the programme. The cost of these activities and that of people delivering these sessions is likely to need to come from external grants, as residential care homes and day centres are unlikely to be able to or willing to contribute to the costs, with the alternative being developing a voluntary led delivery model.

## 7. Addendum – Further Evidence from Post-Pilot Delivery

- 7.1. The British Gymnastics Foundation chair-based exercise pilot programme ended in June 2016 with evidence of demonstrable physical, emotional and cognitive benefits to older people participating. These benefits prompted the two residential care homes to wish to continue the programme and the British Gymnastics Foundation were able to carry on the programme in these two places; providing the opportunity to implement the learnings from the pilot and further investigate the impact of the programme.
- 7.2. The British Gymnastics Foundation developed a feedback form based on the observed benefits during the piloting of the programme and the publication of the results from the programme in Korea<sup>3</sup>. Staff at Hunters Down Care Home were asked to complete the feedback form which included questions on changes in movement, emotional state and memory recall, engagement, socialising and fun and energy. The staff at Hunters Down Care Home provided their collective assessment on how fourteen residents participating in the programme did on these measures, with the feedback form completed in April 2017.
- 7.3. The fourteen residents consisted primarily of older people having been participating in the programme since its inception and three older people who had been participating for 2, 6 and 8 months respectively. Table 1 (below) shows the questions asked and the proportion of older people who the care home staff believed had shown an improvement.

---

<sup>3</sup> Hans, Y-S., Araki, T., Lee, P-Y., Choi, J-H., Kwon, K-N. and Kin, J-Y (2016)'Development and effect of a cognitive enhancement gymnastics programme for elderly people with dementia', *Journal of Exercise Rehabilitation*

Table 1: Feedback Form Responses

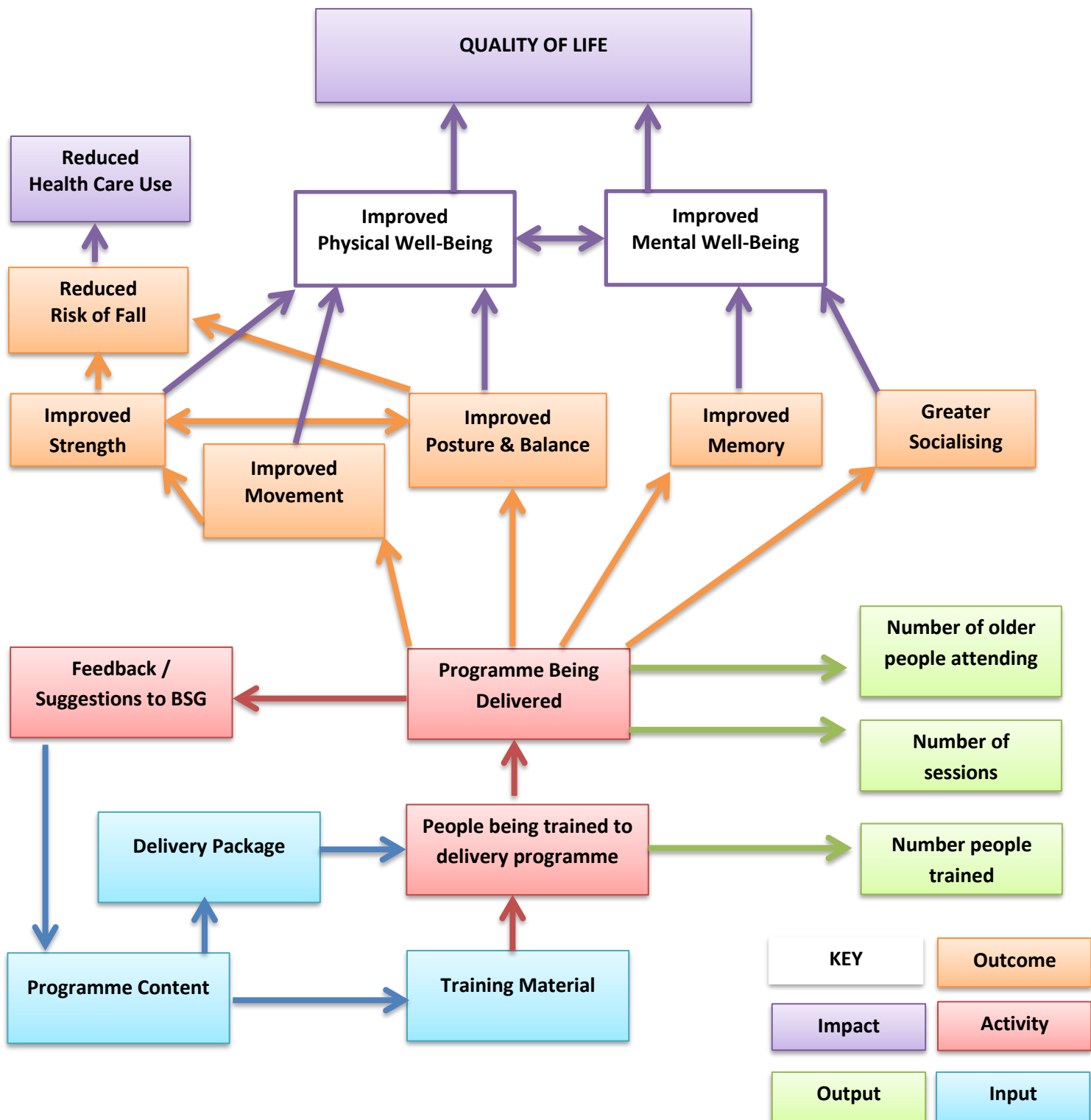
Feedback Form Questions	Number of "Yes" Responses	Proportion of "Yes" Responses
<b>Movement</b>		
Have there been any physical improvements (eating and drinking better, managing more independently)?	10	71%
Is he/she using their hands any better (eg using cutlery, dressing, games like bingo, throwing and catching)?	12	86%
Is he/she moving about any more or any better (are they more steady on their feet)?	8	57%
Is he/she transferring more easily from the chair or the bed?	7	50%
<b>Emotional State</b>		
Does he/she appear to be more settled?	13	93%
Does he/she appear to be happier?	13	93%
Does he/she appear calmer and more relaxed?	14	100%
Has his/her behaviour improved?	12	86%
<b>Memory Recall</b>		
Is he/she remembering events in the past?	9	64%
Is he/she remembering people better or reacting better to people they know?	12	86%
<b>Engaging</b>		
Is he/she making more eye contact?	13	93%
Is he/she easier to connect with?	14	100%
Is he/she chattier?	11	79%
Is he/she more interested about what is going on in the care home?	13	93%
Is he/she initiating more conversations eg saying hello first or saying things like you look nice?	10	71%
<b>Socialising</b>		
Is he/she socialising better with other residents and staff?	12	86%
Is he/she coming out of their room more?	14	100%
Is he/she eating with the other residents more frequently?	12	86%
Is he/she joining in more with activities in the care home?	11	79%
Is he/she happier when leaving the unit?	10	71%
<b>Fun</b>		
Is he/she joking more?	11	79%
Is he/she laughing more?	12	86%
<b>Energy</b>		
Does he/she appear brighter and more alert?	14	100%
Is he/she sleeping better at the right time?	9	64%
Is he/she speaking more clearly?	11	79%

Note: Questions not presented as ordered on feedback form

7.4. Table 1 shows that the care home staff assessed 10 out of the 14 older people (71%) to have achieved an improvement in some physical movement, 13 out of the 14 older people (93%) to be happier and more settled, 14 out of the 14 older people (100%) to be easier to connect with and 12 out of 14 older people (86%) to be socialising with other residents and staff better. For two of these residents the care home staff also noted a reduction in medication with them writing “stopped his depression tablets [and] blood pressure tablets reduce in dose” and “*have taken [name removed] off sleeping tablets*”.

7.5. The findings from the responses to the feedback forms is consistent with earlier findings from the evaluation of the pilot programme and with the care home staff reflecting that during the period that these fourteen residents have been participating in the programme their external environment has not changed significantly; one can therefore be relatively confident that at least some of the improvements observed are likely to be a result of the programme. This would benefit from being tested further, along with understanding how representative these fourteen residents are of all participants in the programme.

## Annex – Theory of Change Model<sup>4</sup>



<sup>4</sup> The Theory of Change model has been developed by the author of this report based on evaluation findings. This model has not been tested with others and is intended to provide a starting point from which to develop.

## References

- Anthony, K., Robinson, K., Logan, P., Gordon, A. L., Harwood, R.H. and Masud, T. (2013) 'Chair-Based Exercise for Frail Older People: A Systematic Review', *BioMed Research International*
- Ciairano, S., Emma, M. and Rabagliette, E (2010) 'The effects of a physical activity programme on the psychological wellbeing of older people in residential care facility', *Ageing & Society*
- Conradsson, M., Littbrand, H. and Lindelof, N. (2010) 'Effects of a high-intensity functional exercise programme on depressive symptoms and psychological well-being among older people living in residential care facilities – a cluster-randomized controlled trial', *Aging & Mental Health*
- Haberkost, M., Dellmann-Jenkins, M. and Bennett, J.M. (1996) 'Importance of quality recreation activities for older adults residing in nursing homes', *Education Gerontology*
- Kim, S-G. and Park, J-H. (2015) 'The effects of dual-task gait training on foot pressure in elderly women', *Journal of Physical Therapy Science*
- Lautenschlager, N.T., Cox, K.L. and Flickre, L. (2008) 'Effect of Physical Activity on Cognitive Function in Older Adults at Risk of Alzheimer Disease: A Randomised Trial', *JAMA*
- Lee, S-H., Kim, Y-M. and Le, B-H (2015) 'Effects of virtual reality-based bilateral upper-extremity training on brain activity in post-stroke patients' *Journal of Physical Therapy Science*
- McKee, K. J., Harrison, G. and Lee, K (1999) 'Activity, friendship and wellbeing in residential settings for older people', *Ageing & Mental Health*
- Ray, S. & Davidson, S. (2014) 'Dementia and cognitive decline – A review of the evidence', Age UK London.
- Skelton, D. A. and Beyer, N. (2002) 'Exercise and injury prevention in older people', *Scandinavian Journal of Medicine & Science in Sports*

Stevens, V. K., Bouche, K. G., Mahieu, N. N., Coorevits, P. L., Vanderstraeten, G. H. and Danneels, L. A. (2006) 'Trunk muscle activity in healthy subjects during bridging stabilization exercises', *BMC Musculoskeletal Disorders*

Trlep, M., Mihelj, M. and Munih, M. (2012) 'Skill transfer from symmetric and asymmetric bimanual training using a robotic system to single limb performance', *Journal of NeuroEngineering and Rehabilitation*

Uhm, Y-H., Park, S-K. and Yang, D-J (2012) 'Effect of asymmetric exercises to soccer player's spinal deformity and weight bearing' *Journal of the Korean Academy of Clinical Electrophysiology*

Wang, J., Lei, Y. and Xiong, K. (2013) 'Substantial Generalization of Sensorimotor Learning from Bilateral to Unilateral Movement Conditions', *PLoS ONE*