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The Happy Antics Programme: Holistic Exercise for People with Dementia

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Happy Antics: Holistic Exercise for People with Dementia

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Abstract

Background: holistic exercise for people with dementia could have psychological and physical benefits, but there is a lack of research on the experience of this type of exercise. Therefore, the objective of this study was to determine the feasibility and acceptance of holistic exercise among people with dementia.

Method: a holistic exercise programme for people with dementia was designed and implemented. Semi-structured interviews were undertaken to explore participants' experience of holistic exercise, transcribed verbatim and analyzed.

Results: seven themes were generated from the data. They were enjoyment, relaxation, keeping active, social interaction, pain relief, learning something new and intention to continue, respectively.

Conclusion: the results of the current small-scale study provide evidence for the feasibility and acceptance of holistic exercise for people with dementia. In addition, participants appeared to benefit in terms of psychological and physical wellbeing.

Keywords: dementia, care-givers, exercise, holistic, awareness, wellness

INTRODUCTION

Regular exercise is important for older people's health and well-being, especially in maintaining and improving physical endurance, strength, balance and flexibility (Liu and Latham, 2009; Gudlaugsson et al. 2013). Exercise has a potential role in delaying the onset of dementia and Alzheimer's disease (Larson et al. 2006; Andel et al. 2008). Published studies suggest that exercise might delay further deterioration in people who already have

Alzheimer's disease or other dementias (Yu and Kolanowski, 2009; Radak et al. 2010). Significant improvements in memory recall following an exercise programme have been reported in people with late-stage Alzheimer's disease (Dayanim, 2009). Nevertheless, there is evidence to suggest that exercises that integrate functional movements with aspects of mindful body awareness can have an effect on cognitive function among people with dementia (Horowitz, 2006) as well as improvements in caregiver-burden and caregiver-distress (Castro et al. 2003).

Alternative forms of exercise such as yoga, pilates and tai chi have been found to benefit people with dementia (Wolf et al., 2003; Kaesler et al. 2007; Fan and Chen, 2011). For example, a recent study investigated the effects of yoga exercises on the physical and mental health of elderly people with dementia living in long-term care facilities in Taiwan (Fan and Chen, 2011). The study sample consisted of two groups of people with dementia. One group received yoga exercises twice weekly for 12 weeks whilst the other served as a control group, maintaining their usual activities. At the end of the study, the researchers found that yoga-trained people with dementia had better physical and mental health than those who did not participate. The benefits included lowered blood pressure, reduced respiration rate, strengthened cardiopulmonary fitness, enhanced body flexibility, improved muscle strength and endurance, improved balance, and increased joint motion. There was also a significant reduction in depression and dementia-related behavioural problems in the yoga-trained people with dementia. A recent review reported consistent evidence from multiple studies that cognitive stimulation programmes benefit people with dementia with mild to moderate dementia over and above any medication effects (Woods et al. 2012).

Holistic exercise combines physical exercise with the wellness approach (Swarbrick, 2006) where multi-dimensional factors are taken into consideration, and which includes physical, emotional, intellectual, social, environmental and spiritual dimensions (Swarbrick, 1997; Swarbrick 2006, Copeland, 2002; Copeland and Mead, 2004). As an example, a wellness lifestyle can be described as balanced living, where an individual has

adequate nutrition, sleep and rest, productivity, exercise, participation in meaningful activity, social interaction, and supportive relationships (Swarbrick, 1997). When the wellness approach is applied to exercise, holistic exercise strives to encourage individuals not only to take part in physical activity but also to become aware of their own physical and psychological states, and to perform exercise that is purposeful and meaningful to them. In this sense, holistic exercise is a form of exercise integrated with awareness of mind and body, in other words exercising *with* the body in addition to being mindful about what is happening during the exercise activity rather than doing exercise to the body.

Although studies have shown evidence of beneficial effects of different forms of exercise on the physical and mental health of people with dementia, there is a current lack of evidence about the potential benefits of holistic exercise in terms of the physical, psychological and emotional well-being of people with dementia, and it is still unknown whether people with dementia are receptive to holistic exercise. Research on holistic exercise is very new, with only one study published on the effects of holistic exercise on physical and cognitive function in people with dementia (Barnes et al., 2012, 2013). No additional publications were found in relation to holistic exercise and people with dementia and Alzheimer's disease from searching six online databases (AMED, Science Direct, CINAHL, Medline, SPORTDiscus, Psychology and Behavioral Sciences Collection). To our knowledge, investigations on the experience of holistic exercise among people with dementia have not yet been conducted. Therefore, the objective of this pilot study was to determine the feasibility and acceptance of holistic exercise among people with dementia.

METHOD

Participants

A total of 15 people including 8 people with early to middle stage dementia, 5 care-givers and 2 volunteers attended the programme in the presence of Alzheimer's Society staff. Six people (four female) consented to be

interviewed for the preliminary study. They comprised 3 people with dementia, 2 care-givers and 1 volunteer. The age range was 52 to 86 years. Ethical conduct was guided by the Alzheimer's Society (UK) principles in respect to consent, privacy, confidentiality and withdrawal from participation. All collected data was kept and stored in accordance to the UK Data Protection Office (ICO, 1998).

The Happy Antics Programme

The name "Happy Antics" came about when participants were asked how they would describe themselves. This question was posed to them at the first holistic exercise session. One of them said they were all antiques – this sentiment was shared by everyone who participated in the programme. The Happy Antics programme began on 8th August 2013 at the society premises in Workington. Holistic exercise sessions were held once a week for 45 minutes for six weeks. Happy Antics was designed to integrate conventional physical exercise with principles from tai chi, yoga, meditation, qigong, dance movements and mindfulness. The exercises adopted a holistic approach where people with dementia were encouraged to make physical movements that involved stretching and bending, to the best of their individual ability. They were also encouraged to recognise body awareness whilst performing the exercises and taught easy breathing exercises. Exercise routines and movements were choreographed and set to music. Physical movements were non-strenuous and involved exercising specific muscle groups. All of the exercises were chair-based with the exception of a two-minute exercise routine for the knees.

Programme sessions

Sessions comprised light-intensity physical exercise routines that incorporated aspects of yoga, tai chi, qigong, dance movements and meditation (for details of the programme sessions see online Appendix A). A simple cognitive exercise was also included in the sessions. Each session started with a cognitive exercise followed by warm-up exercises, exercise or physical movements set to music, cool-down exercises and a short meditation. The cognitive exercise took place as follows: people with dementia were shown a picture of an object of which the holistic exercise instructor spoke

briefly about. People with dementia were then asked if they had any comments or questions about the object. The first set of cognitive exercises was conducted using pictures of fruit trees (coconut, banana, papaya, mango and pineapple). A single picture was shown every session. Warm-up exercises included movements from yoga with guided instructions on breathing. Exercise routines were set to music such as Doris Day's By the Light of the Silvery Moon, Macarena, Agadoo and Chicken Dance. Cool-down exercises applied tai chi principles. All sessions ended with a short guided meditation focused on breathing and bringing mindful awareness back to the present environment.

Data collection

After six weeks, interviews were held with participants in order to gain an insight to their perceived experience of holistic exercise (for interview guide see online Appendix B). Semi-structured interviews were selected as the means to facilitate responses from people with dementia who have dementia-related difficulties such as memory retention, difficulty in sustaining concentration and expressing themselves (Adelman and Daly, 2005). Each interview was audio taped and lasted for 15 to 20 minutes. The following issues were explored: participants' expectations of the holistic exercise programme, perceptions of self-efficacy in doing the exercises, perceptions of the usability of the programme, intention of attending the sessions and opinion about the sessions. Participants were asked the following questions to encourage them to speak about their holistic exercise: *"Can you tell me about doing the exercises? Did you have any idea of what the exercises would be like before you started attending the sessions?"*

Data analysis

Content analysis was used to analyse the data. The data were coded by the first author and an independent researcher who was blinded to the study. The topic of holistic exercise, the data to be coded and the rules of interpretation were discussed. The coding protocol was tested by coding one record of data collectively. The classification procedure for the coding was agreed upon between the first author and the independent researcher. Following this, the

rest of the data was independently coded by the first author. There was a unanimous agreement on the themes that emerged from the data.

FINDINGS

Adherence

People with dementia were contacted by phone by Alzheimer's Society staff every week to be reminded of the holistic exercise sessions. Their attendance was recorded at every session. The overall attendance rate was 70%.

The themes arising extracted to account for the data were enjoyment, relaxation, keeping active, social interaction, pain relief, learning something new and intention to continue. Participants' names have been replaced with fictitious names.

Enjoyment

All participants reported having enjoyed taking part in the holistic exercises.

"If someone had told me six months ago that I would enjoy something like this I would have not believed them," Jon, person with dementia.

"Lots of good laughs," Mary, person with dementia.

"I think everybody is having a good time, and everyone is enjoying themselves, which is what we come for. I've enjoyed it. I think it's a lot better than I imagined," Fay, care-giver.

"Everyone is friendly and happy," Olivia, person with dementia.

Relaxation

Four participants stated that they felt relaxed after performing holistic exercises.

"I think it's relaxing, it's not something I have the time to do in the week at all because I work a lot of hours," Fay, care-giver.

“They (the exercises) help me to relax, just a feeling of wellbeing afterwards,”
Gerry, care-giver.

“I feel better after it,” Mary, person with dementia.

“I feel good at the end,” Olivia, person with dementia.

Keeping active

All of the participants with dementia mentioned that they looked forward to attending the holistic exercise sessions as long as they were able to get to the society premises (e.g. available transport and care-giver-support). Their responses suggested that the holistic exercise sessions indicated an opportunity to keep active.

“I like to keep moving and this helps,” Olivia, person with dementia.

“It’s making me do something I wouldn’t do at home, and carry out movements I can manage,” Mary, person with dementia.

Social interaction

All participants agreed that attending the Happy Antics programme enabled them to meet other people and socialise.

“I am not normally a sociable person but I like this group and the people in it. I can socialize and talk about my memory problems. I feel good,” Jon, person with dementia.

“Good company, nice people. Feeling part of a team,” Olivia, person with dementia.

Pain relief

Three participants mentioned that although they regularly experienced joint pains, they welcomed the opportunity to 'get their joints going'. One participant reported having some pain relief.

"Oh yes because I do have aching joints generally and I ache a little more afterwards but then I realize for example, my shoulder doesn't ache as much as it did," Gerry, care-giver.

Learning something new

Responses from three participants indicated that learning to do the holistic exercise was empowering. Although there was a consensus that they sometimes faced difficulty in performing physical movements for certain exercise sets, they acknowledged that mastery of the exercises takes time and practice. They appreciated the flexibility of the holistic exercise instruction that did not emphasize on getting everything correctly done.

"You don't have to be perfect. You only need to do what you can. No one looks at you if you do something wrong," Olivia, person with dementia.

"I must admit I never heard of tai chi; I couldn't imagine myself doing it," Gerry, care-giver.

Intention to continue

All participants expressed intention to continue attending the Happy Antics programme.

"I would like more groups like this," Jon, person with dementia.

Limitations

The authors acknowledge that the results are based on a limited number of participants. Therefore, perspectives expressed by this sample may not represent the broader population based on this study. Although the findings of this study may be eventually confirmed through long term trials of holistic

exercise, we believe that the findings contribute to current knowledge about the experience of holistic exercise by people with dementia by demonstrating the feasibility and acceptance of this type of exercise and its potential benefits.

DISCUSSION

This study is one of the first to examine the feasibility and acceptance of holistic exercise as a physical activity for people with dementia. The findings agree with those of Barnes et al. (2012, 2013). They developed and pilot-tested a holistic exercise programme called Preventing Loss of Independence from Exercise (PLIÉ) to improve physical and cognitive function in people with early to middle stage dementia. PLIÉ was an 18-week exercise programme which “combined the best elements of eastern and western exercise traditions including yoga, tai chi, Feldenkrais¹, physical therapy, occupational therapy, mindfulness², and dance movement therapy” (Press release, retrieved from <http://www.medscape.com/viewarticle/781607>, May 28th, 2013).

In their study, the efficacy of PLIÉ was tested in people with dementia who attended an adult day care centre. Six people with dementia with early to middle stage dementia participated in PLIÉ and five people with dementia received usual care. Their findings showed that participation in PLIÉ encouraged people with dementia to communicate amongst themselves and fostered cognitive awareness. There were improvements in cognition measured by using the Alzheimer's Disease Assessment Scale-cognitive subscale (ADAS-cog) and gait speed in people with dementia who participated in holistic exercise compared to those who did not.

There were some similarities in the Happy Antics programme and PLIÉ. Physical exercises were designed for the improvement of physical and cognitive function of which both programmes applied tai chi, yoga and physical/occupational therapy based movements during exercises. Both

¹ A somatic education system introduced by Moshé Feldenkrais (1904-1984) to reduce pain or limitations in movement, to improve physical function, and to promote general wellbeing by increasing students' awareness of themselves and by expanding students' movement repertoire.

² Using the Rosen Method introduced by Marion Rosen (1914-2012) to work with the body-mind for health and wellbeing in the body.

programmes followed a mind-body approach. PLIÉ used the Feldenkrais and Rosen methods, and the principles of Zen were applied in the Happy Antics to facilitate mindful awareness. However, the Happy Antics programme differed from PLIÉ in some ways. Firstly, dance movements were also incorporated into physical exercise. Secondly, sessions included cognitive exercises based on the guiding principles of Cognitive Stimulation Therapy (CST) (Aguirre et al. 2010). Thirdly, breathing exercises through qi gong were included and all participants received a short guided meditation to conclude each session. Care-givers were included in all Happy Antics sessions.

Whereas Barnes et al. (2012, 2013) evaluated holistic exercise in terms of cognitive and physical function, the current study examined participants' experience of holistic exercise. The Happy Antics exercise routines were tailored to the individual abilities of people with dementia where they were guided to perform the functional movements at their own pace and encouraged to recognize body awareness.

Our results show that people with dementia were willing to attend holistic exercise sessions as reflected in the high attendance and positive responses obtained in the qualitative interviews. They also expressed intention to participate in future holistic exercise sessions. In addition, no adverse events occurred during the course of the programme. The principles of Cognitive Stimulation Therapy (CST) were applied in the cognitive exercises where a series of themed images was used as a group activity at the start of each holistic exercise session. Fruit tree images were selected as a set of cognitive exercises where discussions revolved about health benefits of the fruits and uses of the other parts of the fruit trees. As an example, the leaves of the papaya trees contain enzymes that are able to tenderize raw meat (Krishna et al. 2008). Observations during the cognitive exercises were that the fruit tree images generated comments and involvement from the participants when the images were discussed.

At the fourth holistic exercise session, just before the holistic exercise instructor began the cognitive exercise, one participant (person with dementia) pulled out a plastic bag from his pocket containing four green fruits. "This is a guessing game", he grinned, as he passed them over to the

instructor. A single fruit was passed among the other participants. The following questions were asked as the single fruit was passed around the group: *“Is this a fruit? Is it a lemon? Is it a seed? Can it be eaten? What do you do with it? Where did you get it?”* When the green fruit reached the participant who had brought it in, he laughed and said they were green walnuts from his garden! This incident showed a possible aspect of cognitive stimulation where a person with dementia demonstrated memory recall in relation to the activities of the Happy Antics programme.

Observations at the sixth session showed that even though people with dementia could not remember what had occurred during previous sessions, six people with dementia who participated in the holistic exercise sessions could anticipate the physical movements associated with specific music and three people with dementia were able to remember the sequence of the physical movements. This showed potential in maintained procedural memory among people with dementia who attended the holistic exercise sessions. The programme design is consistent with NICE’s clinical guideline recommendation that people with early to middle stage dementia should have the opportunity to participate in exercise and cognitive stimulation groups (NICE, 2006). The themes derived from the qualitative-interview data (enjoyment, relaxation, keeping active, social interaction, pain relief and learning something new) collectively support previous research evidence of contributing factors to exercise adherence and participation in older people (Schutzer and Graves, 2004; Phillips et al. 2004). In addition, the incidence of pain relief reported by a participant who was a care-giver is an important finding due to the complex nature of pain. This suggests that participating in holistic exercise may offer some relief in burden for caregivers as they face many challenges in providing care for a patient with dementia, including physical and psychological distress (Kiecolt-Glaser et al. 1991; Schulz and Martire, Richard 2004). The Happy Antics programme was able to stimulate and engage people with dementia in exercise as well as provide a social learning environment and offer potential psychological benefits.

LESSONS LEARNED AND FUTURE WORK

Because some older people have hearing problems, the sound of the music should be properly adjusted to accommodate hearing disability so that they hear the music as well as the voice of the exercise instructor. Seating position is important because hearing-impaired people sit best in front of the instructor where they are able to lip-read as well. The role of the care-giver is very important during participation as it greatly encourages a person with dementia because they understand the patient very well. The person with dementia feels more confident being close to the care-giver. Observations show that persons with dementia who come for the Happy Antics sessions express a desire to attend the sessions even if they do not perform the exercises accurately. Therefore, presumably they feel the Happy Antics programme is beneficial to them.

Happy Antics continues to run weekly at the Alzheimer's Society's premises. The basis for the Happy Antics programme is mainly creativity in exercise. We have evidence to suggest that incorporating holistic and cognitive elements into exercise has potential in making exercise more interesting and stimulating for older people, in particular people with dementia, thus eliminating any onset of boredom and monotony associated with regular exercise. New exercise routines are currently being choreographed to facilitate exercising different muscle groups and new cognitive exercises that consider the main interests, likes and dislikes of older people are also being researched. Although they may enjoy performing certain exercise routines frequently (for example, the Chicken Dance is a favourite), they also appreciate new exercise routines. The programme could be expanded to other places for older people. A holistic exercise manual could be compiled for this purpose.

CONCLUSION

The results of the current small-scale study provide evidence for the feasibility and acceptance of holistic exercise for people with dementia. In addition, participants appeared to benefit in terms of psychological and physical wellbeing. We look forward to the wider adoption of holistic exercise for people with dementia.

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CONFLICT OF INTEREST

None.

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Online Appendix A - series of holistic exercise programme sessions

Session	Exercise	Description
1	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Image of coconut tree • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements
	Exercise routine	<ul style="list-style-type: none"> • Demonstration of physical movements³ by the instructor, followed by participants and then performed together with music background • Slow routine (set to Doris Day's Dream a Little Dream) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster speed routine with group work⁴ (set to the Chicken Dance)
	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation⁵ to conclude the session
2	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Image of banana tree • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements
	Exercise routine	<ul style="list-style-type: none"> • Slow routine (set to Doris Day's Dream a Little Dream) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster speed routine with group work (set to the Chicken Dance) • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session

³ Different physical movements are used for various muscle groups and exercise routines. For example, the exercise routine set to Los del Mar's Macarena is a workout for the upper body and arms.

⁴ Participants interact with each other (e.g. turning to the right or left to clap their hands together in beat with background music)

⁵ Participants receive instruction to bring back awareness in alignment within themselves and their present environment. Instructions include, "Let's now be within ourselves, you can close your eyes if you like, let's settle down...." To conclude the session, a sentence is gently stated to participants by the instructor, "well done, everybody, we are now at the end of our exercise session. Today is Thursday and we are at the Alzheimer's Society, Workington. Thank you everyone."

	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session
3	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Image of papaya tree • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements
	Exercise routine	<ul style="list-style-type: none"> • Exercise routine for the knees (set to the Tea Pot Song) • Slow routine (set to Doris Day's By the Light of the Silvery Moon) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster speed routine with group work (set to the Chicken Dance)
	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session
4	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Green walnuts⁶ • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements
	Exercise routine	<ul style="list-style-type: none"> • Exercise routine for the knees (set to the Tea Pot Song) • Slow routine (set to Doris Day's By the Light of the Silvery Moon) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster speed routine with group work (set to the Chicken Dance) • Faster routine for upper body, arms and hands (set to the Macarena)
	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session

⁶ One of the participants (person with dementia) had brought an object of discussion to the group so the image of a fruit tree was omitted for this exercise.

5	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Image of mango tree • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements
	Exercise routine	<ul style="list-style-type: none"> • Exercise routine for the knees (set to the Tea Pot Song) • Slow routine (set to Doris Day's Dream a Little Dream) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster routine for upper body, arms and hands (set to Black Lace's Agadoo) • Faster routine for upper body, arms and hands (set to the Macarena)
	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session
6	Cognitive exercise Breathing exercise Warm-up	<ul style="list-style-type: none"> • Image of pineapple tree • Practice of qigong • Stretching, bending, hand yoga and tai chi-based movements • Slow routine (set to Doris Day's Dream a Little Dream)
	Exercise routine	<ul style="list-style-type: none"> • Slow routine (set to Doris Day's By the Light of the Silvery Moon) • Exercise routine for the knees (set to the Tea Pot Song) • Leisure speed routine (set to Ella Fitzgerald's Paper Moon) • Faster speed routine with group work (set to the Chicken Dance) • Faster routine for upper body, arms and hands (set to Black Lace's Agadoo, followed by Macarena)
	Cooling down	<ul style="list-style-type: none"> • Tai chi-based movements, followed by breathing exercises and a short guided meditation to conclude the session

Online Appendix B – structured interview questions

	Question for person with dementia	Question for care-giver/volunteer
1	Did you have any idea what the exercises would be like <i>before</i> you started attending the sessions? What did you think when you first heard about it?	Did you have any idea what the exercises would be like <i>before</i> you started coming to observe/join ⁷ the sessions with your patient? What did you think when you first heard about it?
2	Now that you have taken part in the sessions, do you have any other expectations of the Happy Antics programme? Do you think you could get something out of it? Do the exercises that we have been doing meet your expectations?	Now that you have taken part/observed the sessions, do you have any other expectations of the Happy Antics programme? Do you think your patient could get something out of it? Do you think you could get something out of it as well? Do the exercises that we have been doing meet your expectations?
3	Were the instructions for the exercises clear and understandable to you? Were you able to perform the movements/group work?	Were the instructions for the exercises clear and understandable to you? Was your patient able to perform the movements/group work?
4	<i>Would</i> you continue to attend the Happy Antics sessions if they were available assuming you had transport and your care-giver with you? <i>Do you think</i> you would continue to attend the sessions in future...in say the next 3 months, if they were available (assuming the availability of a care-	In your opinion, is your patient likely to continue attending the Happy Antics sessions assuming the availability of transport and carer-support? Do you think your patient would intend to attend the sessions in future, assuming the availability of transport and carer-support?

⁷ Carers participating in holistic exercise alongside their patients provided reassurance to people with dementia and helped them to cope with dementia-related difficulties (e.g. physical coordination – move your right foot, lift your left arm).

giver and transport)?

- 5 In your own words, tell us about your experience of the Thursday group sessions. Tell us how you feel and think about Happy Antics. This includes anything you like or don't like about it, or anything else you would like to tell us.

Tell us what you think about the Happy Antics programme from your own perspective.
