"I never thought I could do that…": Findings from an Alexander Technique pilot group for older people with a fear of falling.

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Abstract

Introduction

Fear of falling is a major problem facing the health care system. No clear evidence exists as to the most effective management approach although a need for both psychological and physical intervention is recognised. The Alexander Technique (AT) is primarily an educational holistic self-management approach which improves balance and has psychological benefits. This small scale mixed methods exploratory pilot study investigated changes following, and acceptability of, an AT group intervention for older people with a fear of falling.

Methods

Twelve volunteers aged ≥ 65 years with a fear of falling took part in a nine-week, 12 session AT group intervention. They completed a range of standardised measures at 4 time points (baseline, immediately pre and post intervention, and one month post intervention). A sub-group participated in a focus group discussion following the group intervention. Quantitative data were analysed using non-parametric statistics, with thematic analysis employed for qualitative data.

Results

The fear of falling primary outcome measure and other quantitative results were inconclusive, however focus group qualitative data suggested some profound changes with improvements in movement, mood and confidence. A combination of awareness and acceptance led participants to feel empowered to make adjustments to their activity. Participants found learning the AT enjoyable and were able to use it to advantage in everyday activities.

Discussion/Conclusions

The intervention had a positive impact on falls-related and physical skills, and psychological well-being. This supports its potential as a useful intervention for older people with a fear of falling, larger scale studies are merited.

Keywords: *Older people, Alexander Technique, Fear of falling, Ageing, Group intervention*

Introduction

Fear of falling is a major problem facing the health care system, [1] and one which is likely to increase as the population ages. Fear of falling is both a predictor of actual falls [2] and a cause of inactivity and social withdrawal, with all the attendant physical and psychological issues [2,3]. The UK National Service Framework for older people [4] and UK National Institute for Clinical Excellence guidance [5] highlight the potential for increased dependency, social isolation and psychological health problems as a consequence of falls. There is no clear evidence as to the most effective approach to managing fear of falling except that there seems to be a need for both a psychological and physical intervention [6]. Approaches combining Tai chi and cognitive behavioural therapy (CBT) have shown promising outcomes [7] but, to date, a single integrated approach to managing this significant problem has remained elusive.

Despite the evidence that fear of falling is a major risk factor for actual falling, UK falls services tend to work with those who have already fallen and focus on exercises to develop strength and improve balance, alongside practical assessments of hazards within the person's home, their vision and medication [5]. This approach, however, does not provide strategies which can be used in the context of daily life inside and outside the home. An approach that not only helps to prevent falls but also increases confidence and wellbeing is likely to yield much greater benefits. For example, increased confidence may lead to greater social participation, particularly outside of the home, thus ameliorating the negative effects of social isolation on older people's health [8]. Additionally, group interventions which aim to increase social participation have been shown not only to improve physical health, but also to reduce the number of falls [9]. An intervention that aims to reduce fear of falling

may, therefore, reduce the number of falls through both increased confidence and resultant increased social participation.

The Alexander Technique (AT) is primarily an educational holistic self-management approach which helps people gain greater control over their reactions, increase their self-awareness and recognise and reduce harmful postural and movement habits through cognitive change. The AT can be used and applied in all situations in everyday life. The AT is based on the premise that mind and body are indivisible and outcomes of training in the AT reflect this in that they encompass changes in movement co-ordination, adaptability of muscle tone, posture and gait [10-15], improvement in mood [16], confidence and sense of wellbeing [17]. A systematic literature review suggests that the AT is beneficial in health settings [18].

Three group studies of older people have reported improvement in balance following training in AT [19,20,13]. Two studies [20,13] included a fear of falling measure, however, no significant improvement was found. The short time period of one study and the visual impairment of participants in the other may explain this lack of significant. One case study has also reported significant improvements in balance and automatic balance recovery following one-to-one AT lessons [21].

Studies have shown psychological benefits for individuals who learn the AT. Participants with Parkinson's disease with an age range of 64 to 66 used the AT to help them relax and cope with panic and stress [22], they also experienced a reduction in depression [16]. People learning the AT have qualitatively reported psychological benefits, including an

increase in self-awareness and presence in the world, they have also talked about feeling more optimistic about growing older [17]. There are reports of greater perceptions of control and increased confidence following AT lessons [23,17].

In addition, AT lessons have been found to be acceptable to trial participants who, in the main, enjoy the process of learning the AT [23]. There is also evidence that individuals who learn the AT continue to use their skills in the long term. At six months follow up, in the study of a one to one AT intervention for people with Parkinson's disease, all participants were still using their AT skills in their daily lives [22].

The AT is therefore a self-management approach which can help people to develop the ability to co-ordinate themselves quickly and efficiently in any situation thus allowing improved balance and movement. In addition it can build confidence and increase a sense of wellbeing. It is acceptable to individuals and is used in the long term by those who have learnt it. The AT has the potential to provide a much needed holistic approach to address fear of falling which presents a major risk in the older population. This pilot study had the primary aim of investigating outcomes following an AT group intervention for older people with a fear of falling. A secondary aim was to explore feasibility and acceptability of the AT delivered in a group format.

Method

Design

This pilot study employed an open trial design with mixed quantitative and qualitative measures. Participants took part in a 12 session AT group intervention delivered over nine weeks. The quantitative element used repeated measures incorporating a baseline control, measures were taken at four time points: baseline (on an assessment day one month before the intervention started), immediately pre-intervention, immediately post-intervention and at follow up (one month after the end of the intervention). Facilitated focus group discussions (FGDs) were used to collect qualitative data between the end of the group intervention and the one month follow up.

Prior to the start of the study, ethical approval was obtained from the University of Hull, Faculty of Health and Social Care research ethics committee – reference number 152.

Participants

Participants were aged 65 years or over and had a significant fear of falling as measured by a score >20 on the Falls Efficacy Scale – International (FES-I) [24]. They were required to have adequate English, hearing, and sight, and be sufficiently ambulatory to support their own weight (use of sticks was permissible). They were eligible for inclusion whether or not they had experienced a fall. Potential participants were excluded if they had a neurological condition affecting balance, or cognitive impairment sufficient to prevent group participation. Nineteen people responded to advertisements, and of these 14 met the initial criteria and were send the FES-I. All 14 met the FES criteria and completed initial baseline measures.

Of the 14 people eligible to take part, two withdrew before the group started, one due to the commitment involved, the other did not want to take part during winter. The 12 participants who took part in the group comprised one male and 11 females, their ages ranged from 65 to 88 with a mean of 73 years (s.d. 7.3), all described their ethnicity as white. Two participants described their relationship status as single, five as married, two as divorced, and one as widowed (missing data, 2). Their highest level of formal education was age 16-18 (n=2), degree (n=4), post-graduate (n=1), and none (n=2) (missing data, 3). Participants had a range of issues relating to their fear of falling including chronic pain, history of vestibulitis, mobility difficulties, and previous falls. Seven people had experienced one or more falls In the preceding six months.

Data Collection

Quantitative measures

These were taken at baseline (assessment day), immediately pre-group intervention, immediately post-group intervention and at one month post-group intervention.

Primary outcome measure

Fear of falling

FES-I: Falls Efficacy Scale – International [24]: The FES-I is a 16 item measure, which asks participants how concerned they are about the possibility of falling in various situations, such as going up and down stairs, using a 4-point scale. It has a minimum score of 16 and a maximum score of 64, with higher scores indicating greater concern about falling. It is widely used to assess fear of falling and has good internal validity (Cronbach's alpha = 0.96)

[24] and demonstrated reliability and validity in a community dwelling group of individuals aged 70 – 90 [25].

Secondary measures

Depression

GDS: Short-Form Geriatric Depression Scale [26]: The GDS is designed to assess depression in an older adult population. It consists of 15 items which ask participants how they feel with a yes or no answer, and is therefore quick and easy to complete. It has a minimum score of 0 and maximum score of 15, with greater scores indicating greater level of depression.

Health status

SF-12: Short-Form Health Survey – 12 [27]: This is a 12 item scale, with two subscales: physical health component (PCS) and mental health component (MCS). It is widely used in a number of populations, including older adults, to assess quality of life. It has a much quicker completion time than the longer SF-36 but retains good test-retest reliability and internal validity with a Cronbach's alpha of 0.89 for the PCS and 0.76 for the MCS [27]. It has a minimum score of 0 and a maximum score of 100, with greater scores indicating greater levels of physical (PCS) or mental (MCS) health.

Balance

BBS: Short-form Berg Balance Scale [28]: The short-form of the BBS is a 7-item measure of balance during specific tasks such as reaching forward and standing from sitting, which can

be scored a 0, 2, or 4 points. The maximum score is 28 with higher scores indicating a higher level of balance functioning. The short-form BBS has a Cronbach's alpha of 0.97 [28].

The BBS was administered by trained members of the research team. The other three measures were self-report. At all time-points measures were completed independently while in the presence of other participants and researchers at the venue where the group classes were held. If a participant could not be present, they were sent the self-report measures through the post with a pre-paid return envelope.

Demographic information:

A demographic questionnaire was completed once on assessment day. This collected participants' demographic information including age, gender, level of education and ethnicity. A pre-group health questionnaire was also completed to inform the research team in advance of any relevant health issues.

Qualitative data

Between the end of the AT group intervention and the follow up session, participants were invited to take part in one of two focus groups, each led by a member of the research team who had not been involved in the AT group intervention. Focus groups are particularly useful for examining participants' experiences, as well as how and why they think the way they do about those experiences [29]. They have been used to good effect with older people [30]. A semi-structured interview technique was used to ascertain what participants thought of the AT, of the AT group intervention and whether they experienced any changes as a result of their participation in the group.

Procedure

The study was advertised in community settings in the local area with posters, an information stand, a piece on the local radio, and through contact with local community groups. Participants contacted the researchers to obtain more information about the study and to ensure they were eligible. Interested and eligible participants were sent the FES and, if they scored >20, were invited to complete the baseline measurements at an assessment day. Prior to completing the measures participants gave written informed consent. The group intervention sessions started one month after baseline assessment. Further written informed consent was gained from participants who attended the focus groups.

AT group intervention

Each session lasted for 1½ hours, with a 10 minute break. Participants were invited to arrive up to half an hour before the group started to socialize, have refreshments and speak with the AT teachers. Participants were encouraged to discuss any falls/near falls/health issues that might have occurred between sessions. Each group session was designed to help participants develop skill in the key elements of the AT and apply them to their own individual situation with help from the teachers. The emphasis was practical and experiential throughout. For more information see Table 1.

The group sessions aimed to help participants to develop an understanding of, and skill in, the key elements of the AT and to be able to apply these to their own individual situations. They consisted of a mixture of discussion and explanation, experiential work, practical exercises, and practice. Some 'hands on' was included in each session. 'Hands-on' is a form of touch used by AT teachers "to access and communicate non-verbal implicit information; to increase proprioceptive awareness and facilitate neuromuscular co-ordination" [31, p. 13]; and to guide movement.

Areas covered were:

- recognition of unhelpful habits (these could be habits of movement, tension, cognition or behaviour)
- 'Inhibition' and non-doing - developing the ability to change habitual responses, to increase presence, and to provide an opportunity to make choices in a situation
- widening awareness of both self and surroundings
- learning about musculo-skeletal living anatomy to enable more accurate internal representations and thus increase the possibilities for normal movement with reduced effort
- 'direction' - employing cognitions to facilitate movement and responses with greater ease

A key idea in the AT is that the combination of inhibition and direction allow better functioning of the integrated and dynamic relationship between the head, neck, and spine making it possible to move and respond with better coordination and balance, and less effort and unnecessary tension.

In the majority of sessions participants:

- practised 'active rest' – an activity which encourages alignment of the head, neck, and back and provides an opportunity to practise 'inhibition' and 'direction'
- considered applying the AT skills they had learned to everyday tasks.

Table 1. Summary of session content

The intervention took place over a period of nine weeks with sessions twice weekly for three weeks and weekly for six weeks, making 12 sessions in total. The number and frequency of sessions was informed by Batson & Barker's [20] AT group intervention which had ten sessions over two weeks. The higher initial frequency was to enhance learning while the lower frequency of later lessons provided a longer time period to encourage consolidation of learning and practical skill.

AT teachers

Two AT teachers registered with the Society of Teachers of the Alexander Technique (STAT) and who were experienced in working with groups and teaching the AT to groups, designed the intervention. Both teachers attended and taught all the group intervention sessions.

Data Analysis

As this was a small exploratory pilot study, no sample size or power calculations were performed. Descriptive statistics were used to describe the sample. In case the measures were not normally distributed, Friedman's tests were used to examine if there were differences within subjects between time points. As two participants missed more than two thirds of sessions, they were excluded from the quantitative data analysis. For each of the measures used, only those participants who completed the questionnaires at all four time points were included, this means the N for measures differs as some participants did not complete all measures. The number of BBS measures at all time points is low as participants had to attend in order for this test to be completed whereas other measures were self report and could be completed and returned by post if the participant missed the session.

All focus group interviewees had attended 8 or more sessions. Focus group interviews were recorded and transcribed verbatim. Data were analysed using thematic analysis [32] by two of the research team. Briefly, this involved becoming familiar with the data, generating initial codes, collating codes into potential themes, and reviewing and defining themes.

Results

All 12 participants completed the group i.e. attended sessions throughout the group and did drop out. Ten participants attended more than two thirds (8 or more out of 12) of the sessions and were included in the analysis. Of these 10, there was one male and 9 females, with an age range of 66 to 88 with a mean of 74.8 years (s.d. 7.2). Two were single, four married, three divorced, and one widowed. Highest level of formal education was age 16-18 (n=2), degree (n=3), and none (n=2) (missing data n=3).

Five participants fell during the 9 weeks of the study, though not during group sessions themselves. Two participants each fell once (one between sessions 8 and 9, and one between sessions 9 and 10), one participant fell three times (between sessions 7 and 8, 8 and 9, 9 and 10), and one participant fell five times (between sessions 4 and 5, 8 and 9, 9 and 10, 10 and 11, and 11 and 12). This participant described four of their five falls as 'tripping' or 'stumbling', all were recorded as falls although it was not clear whether they were actual falls or not. At follow up, this last participant was the only one to have fallen since the AT group intervention had ended.

Quantitative

Median scores and interquartile ranges for the outcome measures are given in Table 2.

Measure	Time point			
	Baseline	Pre-group	Post-group	Follow-up
FES (n=9)	38.0(25.5-50.0)	35.0 (23.5-48.0)	32.0 (24.5-53.0)	35.0 (22.5-47.5)
SF-12 PCS (n=7)	37.5 (29.2–44.3)	36.7 (28.6-47.0)	40.0 (37.6-46.3)	43.0 (37.6-51.5)
SF-12 MCS (n=7)	48.8 (40.8–56.3)	45.0 (33.2-53.7)	42.9 (34.6–61.0)	47.0 (39.0–55.5)
GDS (n=8)	3.00 (1.25–6.50)	4.00 (1.75-5.00)	3.00 (0.25-4.00)	2.00 (1.00-4.75)
BBS (n=4)	23.0 (19.0-27.0)	25.0 (22.5-27.5)	25.0 (21.0-27.5)	26.0 (24.5-27.5)

Table 2. Median scores (interquartile range) of outcome measures for participants with complete data

No significant difference was found between the four time points on the FES-I (n=9, p=0.991), the SF-12 physical component (n=7, p=0.319), or the SF-12 mental component (n=7, 0.856). The GDS scores were significantly lower than pre-group scores at the post-group and follow-up time points (n=8, p=0.030), however the majority, 75% or 6/8, of these eight GDS scores were below a clinical threshold of 6 at all four time points and this result is therefore of limited clinical significance. Only four people completed the BERG at all four time points, so a statistical test of scores from all four time points was not undertaken. Nine people, however, completed the BERG immediately pre and post the group and analysis was carried out on these scores. A Wilcoxon signed-rank test did not indicate a statistically significant change (p=0.480) between these two time points. The majority of these participants, 78% or 7/9, scored at the high end of the BERG, above 21, at both these time points.

Qualitative

Seven participants agreed to attend a focus group at the end of the intervention. Two focus groups were held: one with three participants and one with four. Three superordinate themes were identified in the focus group data: changes following the group, experience of the AT, and learning in a group. This paper will focus on changes following the group and the experience of the AT.

Changes following the group

A number of linked changes were discussed by participants including physical improvements, ways of being, awareness, acceptance, and empowerment. Overall, the changes described were positive and this is reflected in the themes.

Physical improvements

Participants described finding it easier to sit, stand, lie down, and use the stairs:

"Well I never thought I'd be able to get down on the floor and lay on the floor but I actually have." (P14)

"I must admit I find the stairs a hell of a lot easier than I did" (P2)

Two participants talked in a positive way about being able to walk without a stick in certain situations:

"I can go and hang out the washing now without a walking stick" (P14)

A number of participants discussed improvements in other health problems, pain, and sleep.

"…because I've come to the Alexander to learn about my body and everything I'm able to walk without quite so much pain, you know, kind of hold myself and not rush." (P6)

Ways of being

Participants described a number of improvements in mood, confidence, and stress:

P2: "[P12] came in here, how I remembered her, very trepidacious…..And the last few times she's come in very upright." P8: "More confidence." P2: "Much more confident that she's got out. And if that's all it's done is to give us confidence, I mean.."

"…but I do think if I hadn't come [to the group] *I don't think I would be able to manage it so well. I felt really, really low, but, you know, it's ok now." (P6)*

"Much calmer. Not so agitated." (P6)

And changes in their ways of being:

"And it makes you feel quite strong somehow" (P8)

"It's taught me to…. turn off the bits you don't need to use" (P2)

"Yes, I feel more in contact with the ground, somehow." (P8)

"*It doesn't take away…you've still got that bit of apprehension there, but yeah. And I think if you didn't have you'd forget to do it, wouldn't you?" (P11)*.

Awareness

Participants described a greater level of awareness of their surroundings, of how they did tasks, and of their own practical limitations.

"…it's made me aware of where I do this tripping which is over the sill in the house." (P12)

"I'm very aware of it when I'm pushing a supermarket trolley, doing that. Am I using anything too much, you know." (P11)

"I think a bit more about doing things, I'm a bit slower about doing things, but that's good. I find it good anyway." (P8)

Acceptance

Linked to this awareness, they also described feeling an acceptance of their limitations and of asking for help when they needed it.

"On a night I used to say 'I can carry them through. I can…' you know, because I had to prove that I could do it. Now I think [shrug]" (P4)

"I can't run as fast or I can't walk as fast as other people, but I don't let that worry me now." (P12)

"We don't have to do it all for ourselves." (P2)

Empowerment

The combination of increased awareness and acceptance appeared to lead to a sense of empowerment.

For example, one participant's greatest fear was stepping off the bus on her own, and talked about how she had managed to do this since coming to the group:

"…and I actually did it twice. So it must have done something because before that I wouldn't have got off a bus without his hand there" (P14)

Other participants talked about how they allowed themselves to move or complete tasks at their own pace, regardless of others' pace.

"Yeah, I think it has with me. I won't let people bully me. Not that people…I won't be rushed, that's what I meant. I won't be rushed." (P12)

Experience of the AT

Participants described finding the AT difficult to understand at first, particularly as the 'non-doing' aspect was different to exercise classes or physiotherapy that they had experienced before.

"Because I've done yoga and that sort of thing and I couldn't understand why there were no specific exercises apart from really the few. No, it was…it was a bit difficult for me to understand what it was about." (P12)

But participants also said it made sense through doing:

"Once you're really into it, actually it made sense. Because you're going through the body and learning about the body and how it related." (P6)

And that they enjoyed learning it:

"…because we did, we had fun, didn't we?" (P2)

Perhaps because it was difficult to understand at first, participants said they enjoyed the concrete aspects of the group such as learning about musculoskeletal living anatomy through exploring where their own major joints and pertinent skeletal structures were with the help of a skeleton & diagrams. In addition, they enjoyed learning verbal cues to help them remember to use AT in their everyday life.

"And what they're saying to you is, 'feel where your body sits,' and immediately, sitting bones, where's your knees and your ankles and two feet and the three places on your feet.

And once you sort of know that that's how you have to sit, your body changes its position." (P2)

Participants described incorporating AT into their routine and everyday tasks such as walking and shopping:

"I'm very aware of it when I'm pushing a supermarket trolley, doing that. Am I using anything too much, you know." (P11)

The 'stopping' aspect of the AT was described as particularly useful by participants. They discussed finding it helped to deal with worries, manage physical activity, and stop falls.

"…in that you've got to stop and 'right, I'm going upstairs and I have got these horrible shoes on, but I've still got to go up and down stairs' and then when you stop, then you can think to lift your feet just that little bit higher. Yes. And going down curbs, that's when I've got to stop, stop, and then go down the curb." (P11)

"And I don't kind of think so much like 'oh gosh I can't do that because it's going to be difficult'. I just go and do it and I can manage it, you know? Because I can…I do have my stops and things." (P6)

"My mother used to say to me, 'you could fall over a matchstick' because I was forever falling. Maybe that could have been prevented if I had stopped and thought and carried myself differently." (P4)

Discussion

The quantitative element of the study suggests that there were no significant changes following the group. The qualitative results, however, provide a more nuanced insight into the changes experienced and suggest that learning the AT in a group can change older people's awareness of themselves and their surroundings and allow them to feel more secure. This awareness combined with acceptance of their limitations led participants to feel empowered to make adjustments to their activity and review their priorities. Though this was a small scale pilot study, and as such has limitations as it is underpowered for the quantitative measures, there are some interesting findings which support the effectiveness of an AT group intervention for fear of falling and support further investigation. The mixed methodology is a strength and the exclusion of those with neurological problems alongside the heterogeneity of reasons for fear of falling make the findings relatable to a general older population.

There is a need for a holistic approach to fear of falling [6], and what is seen from the focus group results is the holistic nature of the changes following the group. Learning the AT enabled the participants to learn more about themselves and to develop both a clearer sense of their physical selves and the way they moved, and an ability to release unnecessary tension. This helped not only with balance but also with confidence and general activity. This is in line with the findings of Jones & Glover [33] that learning the AT enabled participants to become more connected to their physical selves, and improved how they communicated and related to themselves. Similarly, Armitage [17] found that participants reported greater body awareness through learning AT, which appeared to be linked to a subsequent increase in acceptance and ability to let to go of unwanted thoughts and feelings.

Participants reported gaining the confidence and practical skills to do things they had previously not thought possible (from getting down to lying on the floor and getting up again, to stepping off the bus alone), while at the same time accepting that they were more limited than they had previously acknowledged in other areas of their life (such as not being able to walk as quickly or carry as much as before). This readjustment and acceptance of their personal boundaries increasing in some areas and decreasing in others, is an important finding. Firstly, it is promising that participants were able to increase their activity as a result of learning the AT given that fear of falling often leads to a reduction in activity and subsequent social isolation (e.g. Scheffer et al 2008 [3]). Secondly, through acknowledging and acting within their limitations, such as by carrying less, people may be less likely to fall.

Additionally, our evidence that people may benefit by accepting changes in ability as they age, contradicts prevailing discourses of the value of active ageing [34], but finds support in Heckhausen, Wrosch and Schulz's motivational theory of lifespan development [35] which suggests that as they age, people must let go of what they can no longer do, and work to their strengths by adapting their behaviour and being willing to accept help. Participation in the group intervention reported here appears to have achieved this valuable and difficult change by increasing the availability of information for participants about themselves (i.e. what they actually can and cannot do), and information about themselves in relation to prevailing discourses about older age. The increase in availability of information may give participants the knowledge they need to appropriately adjust their boundaries (outwards and inwards). And, importantly, participation in the AT group enabled people to make these adjustments through acceptance and empowerment of themselves, and through the ability

to communicate their needs to others. This outcome appears to be in line with the concept of harmonious ageing proposed by Liang & Luo [36] which regards the attempt to remain ageless and the consequent denial of decline in older age as a cause of disharmony between the body and mind which undermines individuals' ability to make decisions about levels of activity and disengagement.

Participants found it difficult to grasp the AT initially, as it was a different way of thinking and doing than they had encountered before; however, they all persisted with the group, gained understanding through the group and ended up enjoying the process of learning. This learning required a significant degree of courage and commitment (for example moving in different ways, getting down onto, and up from, the floor) and went against ageist stereotypes about limited ability to learn in later years. Participants were confident that they would continue using the AT, and this is in line with other studies of the AT [23,22]. Because their learning was at a level of principles which they could apply rather than exercises to do, they were able to employ their learning in a range of situations not necessarily directly covered in the intervention. It appears that for this group, improved mobility and function was facilitated by attention to process, along with the provision of a safe environment and encouragement to explore movement.

The quantitative findings are to some extent inconsistent with the changes reported in the focus groups. There was no significant reduction in the primary outcome measure, the FES-I. This is interesting as the focus group data suggest some quite profound changes for people. There are a number of possible explanations for this. Firstly, the group did not target fear directly; it worked according to AT principles which seek to improve overall use and

function. Batson & Barker [20] similarly did not find a reduction in fear of falling although they used different measures. One participant talked about the importance of holding onto concern in order not to forget to apply AT principles and so it may be that change in the fear is not needed and concern serves a useful purpose. Secondly, the FES-I is actually a measure of concern about falling. Visschedijk et al. [37] found that it correlated with physical performance more strongly that with psychological factors such as anxiety. We undertook this research in the winter and it was therefore likely that participants would have greater concern about falling in bad weather. This may be suggested by the fact the session with the lowest attendance levels was during the week it snowed and a number of participants said their absence was due to concern about travelling in snow. Thirdly, to some extent a lack of statistical significance was due to ceiling and floor effects in the measures. The BBS was not sufficiently sensitive to show change given that most participants scored maximum, or near maximum, points at the beginning of the group. Had we videoed the BBS what would have been apparent was that the way in which people did things, and the time it took, changed considerably. Similarly there was a floor effect in the GDS as, while there were significant improvements as a group, the group were not significantly depressed to start with. The SF-12 showed a possible trend towards improvement over time in both the MCS and PCS, but this was not near significance. This may have been due to a high level of heterogeneity between scores in a small sample size.

A larger scale study would address the issues of power, and further work in this area should use different measures including a more sensitive balance measure, possibly an efficacy measure (self-efficacy and not falls efficacy), and video-taping. It may also be useful for

further research to include measures, or specifically ask focus group questions, which examine any changes in general, holistic wellbeing.

Conclusions

The AT group offered a holistic intervention which appears to have an impact on falls-related, and more general, physical skills and psychological well-being, and on how people are able to accept and develop their personal boundaries around activity. This potentially makes it a useful intervention for older people in terms of helping them negotiate some of the limitations imposed by ageing in addition to improving their balance and functioning. This pilot study suggests the AT should be investigated further as an intervention for fear of falling and indicates its possible potential as a way of increasing wellbeing in older adults.

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References

1. Zijlstra GA, van Haastregt JC, van Rossum E, van Eijk JT, Yardley L, Kempen GI. Interventions to reduce fear of falling in community-living older people: a systematic review. J Am Geriatr Soc. 2007;55(4):603-15.
2. Delbaere K, Crombez G, Vanderstraeten G, Willems T, Cambier D. Fear-related avoidance of

activities, falls and physical frailty. A prospective community-based cohort study. Age Ageing. 2004;33(4):368-73.

3. Scheffer AC, Schuurmans MJ, van Dijk N, Van Der Hooft T, De Rooij SE. Fear of falling: measurement strategy, prevalence, risk factors and consequences among older persons. Age Ageing. 2008;37(1):19-24.

4. Department of Health. National service framework for older people. Stationery Office: London. 2001.

5. National Institute for Health and Care Excellence. Falls: Assessment and prevention of falls in older people. CG161. National Institute for Health and Care Excellence: London. 2013.

6. Parry SW, Finch T, Deary V. How should we manage fear of falling in older adults living in the community? BMJ. 2013;346:f2933.

7. Huang TT, Yang LH, Liu CY. Reducing the fear of falling among community-dwelling elderly adults through cognitive-behavioural strategies and intense Tai Chi exercise: a randomized controlled trial. J Adv Nurs. 2011;67(5):961-71.

8. Bernard SM, Perry H. Loneliness and social isolation among older people in North Yorkshire: Stage 2. Working Paper, WP 2599. Social Policy Research Unit, University of York: York. 2013

9. Windle K, Francis J, Coomber C. Research Briefing 39: Preventing loneliness and social isolation: Interventions and outcomes. Social Care Institute for Excellence: London. 2011.

10. Cacciatore TW, Gurfinkel VS, Horak FB, Cordo PJ, Ames KE. Increased dynamic regulation of postural tone through Alexander Technique training. Hum Mov Sci. 2011;30(1):74-89.

11. Cacciatore TW, Gurfinkel VS, Horak FB, Day BL. Prolonged weight-shift and altered spinal coordination during sit-to-stand in practitioners of the Alexander Technique. Gait Posture. 2011;34(4):496-501.

12. Cacciatore TW, Mian OS, Peters A, Day BL. Neuromechanical interference of posture on movement: evidence from Alexander technique teachers rising from a chair. J Neurophysiol. 2014;112(3):719-29.

13. Gleeson M, Sherrington C, Lo S, Keay L. Can the Alexander Technique improve balance and mobility in older adults with visual impairments? A randomized controlled trial. Clin Rehabil. 2015;29(3):244-60.

14. O'Neill MM, Anderson DI, Allen DD, Ross C, Hamel KA. Effects of Alexander Technique training experience on gait behavior in older adults. J Bodyw Mov Ther. 2015;19(3):473-81.

15. Hamel KA, Ross C, Schultz B, O'Neill M, Anderson DI. Older adult Alexander Technique practitioners walk differently than healthy age-matched controls. J Bodyw Mov Ther. 2016;20(4):751-60.

16. Stallibrass C, Sissons P, Chalmers C. Randomized controlled trial of the Alexander technique for idiopathic Parkinson's disease. Clin Rehabil. 2002;16(7):695-708.

17. Armitage J. Psychological change and the Alexander Technique. [unpublished ClinPsyD thesis]. Hull: University of Hull; 2009.

18. Woodman JP, Moore NR. Evidence for the effectiveness of Alexander Technique lessons in medical and health-related conditions: a systematic review. Int J Clin Pract. 2012;66(1):98-112.

19. Dennis RJ. Functional reach improvement in normal older women after Alexander Technique instruction. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences. 1999;54(1):M8-M11.

20. Batson G, Barker S. Feasibility of Group Delivery of the Alexander Technique on Balance in the Community-Dwelling Elderly: Preliminary Findings. Act, Adapt & Aging. 2008;32(2):103-19.

21. Cacciatore TW, Horak FB, Henry SM. Improvement in automatic postural coordination following alexander technique lessons in a person with low back pain. Phys Ther. 2005;85(6):565.

22. Stallibrass C, Frank C, Wentworth K. Retention of skills learnt in Alexander technique lessons: 28 people with idiopathic Parkinson's disease. J Bodyw Mov Ther. 2005;9(2):150-7.

23. Yardley L, Dennison L, Coker R, Webley F, Middleton K, Barnett J, et al. Patients' views of receiving lessons in the Alexander technique and an exercise prescription for managing back pain in the ATEAM trial. Fam Pract. 2010;27(2):198-204.

24. Yardley L, Beyer N, Hauer K, Kempen G, Piot-Ziegler C, Todd C. Development and initial validation of the Falls Efficacy Scale-International (FES-I). Age Ageing. 2005;34(6):614-9.

25. Delbaere K, Close JC, Mikolaizak AS, Sachdev PS, Brodaty H, Lord SR. The Falls Efficacy Scale International (FES-I). A comprehensive longitudinal validation study. Age Ageing. 2010;39(2):210-6.

26. Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS): Recent evidence and development of a shorter version. In: Brink TL, editor. Clinical Gerontology: A guide to assessment and intervention. The Haworth Press: New York; 1986:165-173.

27. Ware JE, Kosinski M, Keller SD. A 12-item short-form health survey - Construction of scales and preliminary tests of reliability and validity. Med Care. 1996;34(3):220-33.

28. Chou C-Y, Chi-Wen C, Hsueh I-P, Sheu C-F. Developing a short form of the Berg Balance Scale for people with stroke. Phys Ther. 2006;86(2):195.

29. Kitzinger J. Qualitative research. Introducing focus groups. BMJ. 1995;311(7000):299.

30. Leob S, Penrod J, Hupcey J. Focus groups and older adults - Tactics for success. J Gerontol Nurs. 2006;32(3):32-8.

31. Stallibrass C, Hampson M. The Alexander technique: its application in midwifery and the results of preliminary research into Parkinson's. Complement Ther Nurs Midwifery.

2001;7(1):13-8.

32. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006;3(2):77-101.

33. Jones T, Glover L. Exploring the psychological processes underlying touch: lessons from the Alexander Technique. Clin Psychol Psychother. 2014;21(2):140-53.

34. Katz S. Busy bodies: Activity, aging, and the management of everyday life. J Aging Stud. 2000;14(2):135-52.

35. Heckhausen J, Wrosch C, Schulz R. A motivational theory of life-span development. Psychol Rev. 2010;117(1):32-60.

36. Liang J, Luo B. Toward a discourse shift in social gerontology: From successful aging to harmonious aging. J Aging Stud. 2012;26(3):327-34.

37. Visschedijk JHM, Terwee CB, Caljouw MAA, Spruit-van Eijk M, van Balen R, Achterberg WP. Reliability and validity of the Falls Efficacy Scale-International after hip fracture in patients aged >= 65 years. Disabil Rehabil. 2015;37(23):2225-32.