Animal magic or a bone of contention? An exploration of dog ownership and adaptation in people with post-stroke aphasia.

COUTTS, E. and COOPER, K.

2021

Animal magic or a bone of contention? An exploration of dog ownership and adaptation in people with post-stroke aphasia

Emma Coutts[a] (*), Kay Cooper[b]

[a]*NHS Grampian: Speech and Language Therapy, Fraserburgh Hospital, Fraserburgh, Aberdeenshire, UK*

[b]*School of Health Sciences, Robert Gordon University, Aberdeen, UK*

(*) Corresponding author:

Emma Coutts

Speech and Language Therapy Department

Fraserburgh Hospital

Lochpots Road

Fraserburgh

AB43 9NH

United Kingdom

Tel: +44 (0) 1346 585107

Email: Emma.Coutts@nhs.scot

Animal magic or a bone of contention? An exploration of dog ownership and adaptation in people with post-stroke aphasia

Abstract

Background: There is extensive literature on the impact of aphasia on human interactions, with findings including family tension and reduced participation affecting the person with aphasia's ability to adapt to life post-stroke. However research on relationships between people with aphasia and their pets is sparse. Studies in other healthcare fields have found benefits and drawbacks of pet ownership. The presence of a communication disorder adds a unique perspective, with implications for the ability to interact with the animal.

Aim: This study explores the experiences that people with aphasia have of dog ownership as they adapt to life post-stroke, from the perspectives of both people with aphasia and close family members or carers.

Methods & procedures: Ten semi-structured interviews were conducted with seventeen people with aphasia and/or relatives or carers. Thematic analysis was carried out.

Outcomes & results: Three major themes were generated. These were: (i) the adaptation of the dog to the person with aphasia; (ii) the adaptation of the person with aphasia to their dog; (iii) experiences of dog-walking interactions. Positive and negative aspects were reported within each theme.

Conclusions: The implications of these findings are significant for rehabilitation professionals: just as the person with aphasia needs support in the context of their human relationships and the challenges and opportunities that these present, their relationship with their dog should also be considered.

Keywords: stroke, aphasia, pets, social interaction, social participation

Introduction

Post-stroke adaptation has been described as the process of moving forward in order to increase independence and maintain a purpose in life, and it is accomplished by taking positive steps such as engaging in meaningful activities and social participation (Grohn et al., 2014). However, this is challenging for people with aphasia because research has demonstrated that they experience significantly reduced social participation relative to age-matched control participants and even to other people who have had a stroke but who do not have aphasia (Ford et al., 2018). It has been suggested that "language is the currency of relationships" (Parr et al., 1997 p.44). Therefore language difficulties can have a profound effect on social functioning at all levels, from interactions with family and friends to those with acquaintances and strangers. Loss of friends, social contacts and social activities are frequently reported in people with post-stroke aphasia (Hilari & Northcott, 2006; Le Dorze et al., 2014; Northcott, Marshall et al., 2016). The effects of negative interactions and communication difficulties may result in the person with aphasia becoming passive in communicative activities and hence experiencing low self-esteem and powerlessness (Davidson, Howe, et al., 2008; McClung et al., 2010). This can lead to social isolation, withdrawal and depression (Davidson, Howe, et al., 2008; Davidson, Worrall, et al., 2008; Hilari & Northcott, 2006; Nyström, 2006; Parr, 2007). Furthermore, tension in family relationships can arise because of the person with aphasia's loss of role within the family and new dependence on family members (McClung et al., 2010; Fotiadou et al., 2014; Northcott, Moss, et al., 2016). Marital relationships may be particularly affected, with reports of reduced satisfaction and negative feelings of the spouse to the person with aphasia (Ford et al., 2018; McClung et al., 2010). Indeed there is evidence that close family members of people with aphasia undergo significant adjustment themselves, and their perspective on this process is important (Le Dorze et al., 2009; Michallet et al., 2003).

Research in fields such as mental health disorders, chronic pain disorders and general health of older people has investigated how pet ownership can support psychosocial well-being. For example, Brooks et al. (2018) carried out a systematic review of the role of companion animals for people with mental health conditions. They grouped their findings into four themes. The first of these is emotional work, explained as the ability of pets to alleviate anxiety, isolation and loneliness, as a "source of support which people could trust and rely on compared with other social networks" (Brooks et al., 2018 p. 6). The second theme is practical work, including distraction from distress, provision of routine and a reason for activity. The third theme explores how pets can facilitate social interactions. The final theme is biographical work: the ability of pets to improve an individual's self-worth and sense of purpose, through the provision of "an opportunity to care for "someone" without the complexities of human relationship dynamics which are often dependent on conditional love and approval" (De Souza 2000, quoted by Zimolag & Krupa, 2009 p.128). However, the literature on the impact of pet ownership on health and well-being is not exclusively positive. Brooks et al. (2018) report that some quantitative studies have found neutral or even small negative effects of pet ownership. A systematic review by Islam and Towell (2013) found no robust evidence on whether pets have a positive impact on their owners' well-being. Issues include the financial costs and care burden, especially if the pet is difficult to manage. This could lead to guilt on the part of the owner (Islam & Towell, 2013) or to irritation due to the demands of care (Stern at al., 2013). A further potential negative impact is grief following the death of a pet (Stern at al., 2013).

In the case of aphasia, there are studies on the formal use of dogs in animal-assisted therapy (AAT). For example, Macauley (2006) explored AAT with three participants with aphasia and found that while there were no significant improvements in test results compared with more traditional therapy, the participants reported feeling more motivated by the AAT

and finding those sessions more enjoyable and less stressful. LaFrance et al. (2007) reported on a case in which a therapy dog was found to increase social-verbal behaviours (e.g. attempts to verbalise, automatic speech) and social-nonverbal behaviours (e.g. smiling, gesturing, eye contact) for the participant.

In the existing bodies of literature on the issues faced by people living with aphasia and on the impact of pet ownership described above, it can be seen that there is much overlap around social networks and interactions with family, friends and the wider community. The presence of an acquired communication disorder adds a unique aspect to pet ownership because of its implications for the management of the animal and how the person with diminished language skills and the animal now relate to each other. While the existence of studies on the formal use of dogs in therapy for people with aphasia has been discussed above, there is a lack of research on the more informal aspects of dog ownership for people with this condition. This paper seeks to address this gap by exploring the experiences that people with aphasia have of dog ownership as they adapt to their new circumstances and changed communication post-stroke, from the perspectives of both people with aphasia and close family members or carers.

Methodology

Study design

This was a qualitative descriptive study (Sandelowski, 2000), a methodology commonly associated with nursing and midwifery research (Polit & Beck, 2014), and being increasingly used in other fields of healthcare (e.g. LaGrone et al., 2020; Perez et al., 2020). Qualitative description directly explores the phenomenon of interest from the perspectives of those experiencing it (Bradshaw et al., 2017) and was particularly appropriate for this study which

set out to describe the phenomenon of dog ownership and adaptation by people with post stroke aphasia. In qualitative description, the researcher "stays close to the data and to the surface of words and events" (Sandelowski, 2000 p. 334), a process which facilitates consensus among researchers (Sandelowski, 2000), and which is suitable for relatively novice qualitative researchers (Bradshaw et al., 2017).

Interviews were carried out with people who had post-stroke aphasia and/or a close relative or carer. A semi-structured format was selected to allow flexibility to explore aspects of importance to individuals while having focus maintained by the guide questions (Fylan, 2003). Ethical approval was granted by West Midlands Edgbaston Research Ethics Committee (17/WM/0422). The study is reported in accordance with the Consolidated criteria for Reporting Qualitative research (COREQ) (Tong et al., 2007).

Participants

A convenience sample of individuals with post-stroke aphasia was recruited from an area covered by one health board in Scotland. Potential participants were identified and approached via telephone or face-to-face contact by their speech and language therapists and provided with written project information in an accessible format. They were recruited according to the inclusion criteria, which were: to be over the age of 18 years old, to have post-stroke aphasia and to have owned a dog for a significant part of their rehabilitation/period of adjustment, or to be an adult family member or carer of the above (with the consent of the person with aphasia). They were excluded if they lacked capacity to provide informed consent. The researcher had previously been involved in the management of some of the participants but none of them were receiving treatment at the time of recruitment.

Seventeen participants were recruited and provided written informed consent. Nine of these were people with aphasia, seven were relatives and one was a live-in carer and assistant

(employed by the participant in that capacity before the stroke). Fourteen of the participants were in dyads (i.e. the person with aphasia plus their relative or carer) and three were interviewed solo. Of the latter group, there were two people with aphasia and one relative. Decisions about whether the interviews were in dyads were made by the participants themselves i.e. if the person with aphasia elected to have somebody with them to help speak on their behalf given their communication difficulties. The researcher did not intervene in this process, other than informing participants that they could choose to be interviewed on their own or for a relative, friend or carer to join them. In the case in which the relative was interviewed alone, this was because the person with aphasia, while able to give informed consent, had a healthcare appointment at the time which took priority. The characteristics of the individuals with aphasia and their dogs are presented in table 1.

(Table 1 about here)

Procedure

A total of ten interviews were carried out with the participants in their own homes, either in their dyads (n=7) or solo (n=3). The interviews were carried out by the first author, a female post-doctoral speech and language therapist experienced in working with people with aphasia, using techniques to support the communication of the participants with aphasia (e.g. written words, gesture and drawings, electronic communication support). The interviews were informed by a topic guide covering key issues such as the relationship of the person with the dog before the stroke; how the person with aphasia and the dog reacted to each other in the early days following the stroke; how the person with aphasia and the dog adapted to change over time; whether any problems with managing the dog arose; how interactions with other dog-walkers were managed; whether there were perceived to be general benefits to having a

dog during the period of adjustment (Appendix 1). Interviews lasted between 15 minutes and 40 minutes (M = 29). During the shorter interviews, every effort was made to probe for further information using the communication support techniques discussed above, but they were terminated when the participant felt they had nothing further to add. Data from all interviews, including the shortest duration, were used in the analysis. Interviews were audio recorded and transcribed verbatim. Field notes were not taken but one participant (a family member), in addition to being interviewed, submitted a written list of the advantages and drawbacks of dog ownership. The content of this list was included in the data analysis.

Thematic analysis

The data were analysed manually using the procedure outlined by Braun and Clarke (2006). Following their guidelines, the first step was for the first author to read and re-read the transcripts for familiarisation with the data and to record initial impressions. The second step was the generation of initial codes: data were examined and content pertinent to the research question identified, with each basic segment of meaning labelled. The codes were then organised into possible overarching themes and subthemes (Appendix 2). The next step was to review the data to ensure that the themes truly reflected the content of the transcripts and to revise the themes or relocate data that did not fit the theme to which they had originally been assigned. The themes and subthemes were then defined and named. Lastly, a report was prepared presenting each theme and subtheme and illustrating these with extracts from the data.

In order to ensure rigour, after the first author had generated the codes from the 10 transcripts, the second author independently coded 4 randomly selected transcripts using the generated list. Any differences in coding were discussed and agreement was reached. An audit trail was kept in the form of written records of discussions and decisions that were made.

Results

Three main themes were generated during data examination. These were: adaptation of the dog to the person with aphasia; adaptation of the person with aphasia to their dog; experiences of dog-walking. A fourth minor theme regarding practical issues was also generated. The themes are examined below. In accordance with the approved study protocol, each participant was allocated a code to provide anonymity. Therefore where they are quoted here, they are referred to by that code, with P signifying the person with aphasia, F signifying the family member or carer and the number referring the number code of each interview.

1. Adaptation of the dog to the person with aphasia

This theme describes whether/how the dog changed its behaviour following the person's stroke. Five sub-themes contributed to this theme: the dog's behaviour in the early stages post-stroke; establishing or returning to routine/normal behaviour; negative changes in the dog's behaviour; positive changes in the dog's behaviour; adaptation to the person's changed communication. These sub-themes are detailed below.

Early stages

While some participants reported that the dog was not adversely affected by the absence of the person while in hospital, instances were given in which the dog appeared to pine for them, to become more dependent on another family member or to look around the house for them:

> "She always went into the room, and I decided that that was her looking for (P6), you know, and seeing the empty bed."(F6)

Mixed reactions to the person's return home were reported: in some cases, the dog was described as being excited, while in others, it was felt to be withdrawn initially. One participant, F9, interpreted the latter response as being because the dog was "perplexed" that its normal routine had not resumed immediately. Another participant stated that when he got home:

> "after I got in the door, she stood back. Because I couldn't speak" (P4)

This was echoed by another person with aphasia (P10), but she also reflected that her dogs may have been disturbed by "the hospital smell on me", or annoyed with her:

> "because I went away and left them... maybe dogs can get a little peed off at you when you go away. So I'm not sure but I definitely thought they picked up something was different." (P10)

Overall, these reported reactions suggest dogs' sensitivity to change and potential unease at the disturbance in their relationship with the person with aphasia.

Establishing or returning to routine/normal behaviour

Despite the initial issues discussed above, participants reported that the dog resumed its usual behaviour within a few days. In the case where the dog was acquired post-stroke, it was reported that:

> "probably (dog)'s just grown into (P2)'s ways. He's never known him any different so maybe it makes it easier." (F2)

Negative changes in the dog's behaviour

Maladaptive responses were less frequently reported but included manipulative behaviour, interpreted as a response to the person's new difficulties:

> "because of … the speech not coming out the same, he'll just ignore him. And he finds that if he barks at (P3) because he can't understand him, the only way to get him to stop barking is if (P3) will give him his treat. And he's playing on this more with him... (Dog) knows that.. for peace and quiet on your behalf, that you give in a lot more than I do. And it's surprising how quickly he picked up that one up. .. but then again, is it because he knows that he's got something different, or if it's a case of "OK, you let me off and she doesn't"?" (F3)

The same dog was reported to have displayed worsening behaviour in other ways, for example uncontrollable barking and an adverse reaction to visiting health and care workers (also reported in one other case, P6). The fact that it was the dog who had alerted the family to the person having the stroke may explain its behaviour, which was described as "panicky" and "protective". This individual's wife reflected on whether this could be due to the breed of dog (a cocker spaniel, described by her as "that type of excitable dog") and/or the dog's age at the time of the stroke:

> "If it had been an older dog and more used to the person- and sort of like accepted it a bit more because they're an older more settled dog. But a puppy- not still a puppy- a year old, when it happened, that he's found a bit confusing for him". (F3)

Positive changes in the dog's behaviour

Helpful adaptations in response to the person's changed condition were more frequently reported. In contrast to the case above, one participant (P5) stated that the dog rapidly adjusted to the frequent visits of health and care workers. Other participants (e.g. F6, F7) reported that the dog became more attentive to the person with aphasia, interpreted as being due to the dog's understanding that the person was more vulnerable. In some cases, the dog appeared to make allowances for the person's physical impairments by getting out of the way when they were mobilising or by pulling on the lead less when they were walking them. Some participants discerned more fundamental changes in the dog's character, for example becoming calmer and less boisterous, or becoming more responsive to the person's mood. In one case, it was felt that the dog warmed to the person more after her stroke:

> "I think (dog) understands you've got communication issues and he's got his. I think the two of them have got a common bond there…. He's been through that. Not being able to speak to new people. Confidence issues… I think they understand each other a bit better. .. He likes you more now. " (F8)

Adaptation to the person's changed communication

Many participants reported that it did not seem to matter to the dog that the person with aphasia was unable to produce language accurately, because the actual words were unimportant:

> "I think (dog) got to know that anything he said, even if it didn't sound like her name, was for her to stop and pay heed to what was required." (F9)

There was a widespread belief that the dog responded to the tone of voice:

> "They knew (by the tone of voice) when he was OK with them and when he was annoyed." (F1)

2. Adaptation of the person with aphasia to their dog

The second major theme explores how the person managed and related to their dog post-stroke. Five sub-themes were generated: the early stages; negative changes in their relationship with the dog; positive aspects of communication with the dog; general physical benefits of dog ownership; general psychological benefits of dog ownership.

Early stages

Family members recognised the importance of the relationship between the person with aphasia and the dog by trying to maintain this while the person was in hospital, for example by showing them photos of the dog, deliberately bringing back their smell to the dog, or bringing the dog to visit. Some participants expressed missing the dogs during this period. The concerns of family members with regard to managing the dog were also acknowledged. The mother of a person with aphasia reported:

> "When it happened, (husband of P5) said "we'll need to get rid of the dog". I said "We can't do that.. we've got to wait and see what's happening. If you put the dog away, she'll kill you when she's better!" (F5)

Another family member reported that although there was no question that the person would be able to keep the dog, his inability to control the dog verbally was a potential issue:

> "We never had a thought that oh, you've had a stroke, you won't be able to manage the dog any more, we never thought that way ... I did think really without commands, how do we cope?" (F9)

On returning home, reservations on the part of the person with aphasia were apparent. In the cases in which the dog appeared to be withdrawn initially, one person (P4) found this difficult, while another reported that she was:

> "quite pleased, because (dog) can be boisterous and I was weak and I wouldn't be in the mood for them jumping up on me and stuff at the time." (P10)

This participant, in common with others, mentioned low mood on returning home from hospital as the impact of the stroke became apparent:

> "I think when I came home initially I tried to be normal but I wasn't normal. So I tried and I was getting frustrated, I couldn't speak normally, and I just thought I would get up and everything would be normal again. But it wasn't." (P10)

In some cases the person with aphasia had a more pronounced negative reaction to the dog on returning home:

> "(P1) couldn't be bothered with the dogs when he first came home... he used to ignore the dogs, he had no time for the dogs at all." (F1)

> "(the dog's excitement) was an issue as well because you were nae [not] processing and it was getting irritating very quickly." (F3)

Another participant mentioned issues caused by the person's (P7) physical problems interacting with his weakened voice and the dog's deafness:

> ".. when your mobility wasn't so good, if she didna [didn't] move because... she was a bit- lack of hearing- you would maybe "oh come on dog"- you would maybe get a wee bitty [little bit] frustrated with her... A because she wasna [wasn't] hearing you and B you needed to be somewhere." (F7)

Negative changes in relationship with dog

For some participants, the frustration they felt on returning home remained. Triggers for this frustration included the dog's habitual barking, its attempts to lick the person, or to its manipulative behaviour. In such cases, it was acknowledged that the person now found it more difficult to control the dog(s). One participant attributed the person's difficulties in understanding how to manage the dog to his new cognitive deficits:

> "There's nothing of consistency, because- (P3) won't agree with it.. but it's as if you're saying something and it's not registering- or maybe it's registering that second, or for the duration that you're saying it, but then it's gone, it's not being stored in the right place." (F3)

Friction between couples over the management of the dog was sometimes apparent, with one wife (F3) describing it as a "tug-of-war between us". Resentment when a partner had to take over the main responsibility for the dog was also expressed:

> "And I would have to get on to him, even just to take them to pee.. that's what I said to him, I can't do everything you know, the dogs weren't my thing. I take them out every day and I walk them every day, morning, afternoon... it's not like as though I don't look after them- but they're not my love."(F1)

Other participants reported specific communication difficulties with the dog, such as not being able to give basic command words like "sit" and "stay", or call the dog:

> "I shout for the dog... and I don't say what I'm saying.. er.. the dog's name. ... There are some days I don't remember it's (dog's name). It might be some other word... after the finish I realise I've said something else. It hadn't been (dog's name)." (P2)

In one instance, there was a perception that the person with aphasia's reversion to dialect words affected the dog:

> "I'll say "now stay" and he'll say "now bide". And the dog is like.. I don't know if it's through the aphasia side or the cognitive side but he's reverted back to a lot of country words than what he was before the stroke. So that side, as far as the stroke is concerned, can be confusing for (dog)."(F3)

Loss of specific commands also had potentially serious consequences in the case of an ex-working sheepdog when it tried to work someone else's sheep. The person with aphasia needed to pull it away physically because as her carer said:

> "You wouldn't have been able to use the command to tell him to come off the sheep." (F8)

Positive aspects of communication with the dog

In many cases it was reported that the person with aphasia was able to control the dog to a certain extent even if they had minimal speech, for example by using a vocalisation or a simple gesture such as pointing at the dog or showing it the lead. Some spoke of the importance of dog training, and considered that the use of formal hand signals or a whistle or clicker may be helpful. The sentiment that speech was easier with dogs than with people was frequently expressed. One person with aphasia (P10) perceived that this was because stroking her dogs while talking to them calmed her down and helped her speak more slowly. Another participant reported that:

> "(P8)'s more confident speaking to the dogs than she'd be a person... sometimes you're not that comfortable speaking to people. Dogs you find it easy. It flows out- the words flow out better when she's speaking to the dogs than sometimes people. Which I can understand." (F8)

It should be noted that in contrast with the ease felt talking to the dog, many other participants reported on the lack of confidence or the frustration felt by the person with aphasia when talking to other humans:

> "I see him when people come in to visit ... and maybe there's a slight apprehension because he doesn't know how it's going to go." (F6)

> "He can't get the right words and it's very very frustrating for him. He does get annoyed and he gets angry." (F2)

Close family relationships did not mitigate the sense of frustration. One person with aphasia reported that:

> "My daughter- when I'm speaking, she finishes my sentences before I get it out. I tell her "Don't do that!" She still does it." (P4)

Another person with aphasia described how her light-hearted response belied her true feelings:

> "Although we laugh at myself, and my daughter and son laughs, we just laugh because the words come out wrong but it can be quite frustrating and distressing". (P10)

Sometimes the potential of the dog as a "therapy partner" was identified: one person with aphasia (P7) practised calling his (deaf) dog to increase the strength of his voice. In another case, the wife of the person with aphasia (P6) planned to add dog-related words and phrases to a list of targets for speech work.

Physical benefits of dog ownership

Many participants reported on the fact that having a dog got the person with aphasia out of the house to take physical exercise. In the case in which the dog was acquired post-stroke (P2), this was a driver in the decision to get a dog. Another participant commented:

> "If it wasna [wasn't] for (dog), you might just only have your walk to the shop for the paper."(F3)

Psychological benefits of dog ownership

Many facets of the psychological benefits of dog ownership were mentioned. Firstly, linked to the physical benefits of exercise, many participants reported on the perceived benefit of having a daily routine with the dog, or even a more fundamental sense of role:

> "Gives you a reason and purpose to carry on, someone to care about and look out for and be responsible for. Makes you feel worthwhile, needed, useful." (F2)

This was linked to the sentiment that a dog could prevent the person with aphasia from dwelling on their situation or becoming more introverted:

> "When you have life-changing incident, losing your speech, you become a bit withdrawn. Having a dog prevents you from becoming too withdrawn." (F9)

In some cases, it was felt that the dog added a sense of fun:

> "It's always lovely having a dog in the house anyway, and he's enjoyed it and I've enjoyed it. And you know we're quite a silly pair that will say "Oh, (dog) did that" or something like that, and it's a light-hearted sort of thing." (F6)

Another participant identified that dog walking:

> "gives us both a couple of breathing spaces a day."(F2)

The majority of participants reported on the general sense of companionship provided by the dog. One person with aphasia in particular, whose husband had returned to working away after her stroke, spoke of the comforting influence of her dogs when she felt lonely and low in mood:

> "I just think dogs have got a real calming influence.. when I was getting anxious. " (P10)

For some people, the importance of the dog could not be over-emphasised. One person with aphasia responded to a question about how the dog had helped her by typing into her communication device:

> "I would not have survived". (P5)

This sentiment was not universal though. When asked whether having a dog has helped him recover from the stroke, one participant reported that:

> "I dinna ken [don't know] if it's helped me at all." (P4)

3. Experiences of dog-walking interactions

The third major theme explores dog-walking, an activity specific to dog-ownership but one which affords many opportunities for interactions between humans. Two sub-themes were generated. These were: negative experiences of dog-walking interactions; positive experiences of dog-walking interaction. These sub-themes are explored below.

Negative experiences of dog-walking interactions

Communication difficulties were sometimes reported to have significant consequences for dog-walking. In some instances, the person with aphasia curtailed or avoided such encounters, interpreted as being because of:

> "the self-confidence thing, whether he understands that they're not understanding him or whether it's them saying "oh, I have to go", because they're not understanding him". (F3)

Another person with aphasia used a gesture of grimacing, pointing to his ears, shaking his head and making mumbling noises, which his wife interpreted as being:

> "(so) they'll either think he's just saying he's a loony or he's deaf- who knows what they think? They get the message that communication's going to be hard work. " (F9)

Some participants had experienced specific negative situations. In one instance, the person with aphasia had forgotten to take a dog waste bag and another dog-walker confronted him when he consequently failed to clean up some dog mess. His wife explained:

> "You told him you was in hospital. I don't know if by that they realised that with the speech, there was a problem there." (F3)

Interestingly, during the interview, the person denied that his speech had made it difficult to resolve the situation. He was said by his wife to have been agitated when he returned home, but she felt that this was annoyance with himself for forgetting the bag.

In another case, the person with aphasia (P9) was reported to the dog warden because his dog became aggressive towards another dog. Again it was felt that the situation was not caused or worsened by the speech difficulty, but because the person was not quick enough to get the dog back under control. As this was someone with minimal speech, it would have been interesting to explore further how he managed the altercation with the other dog-walker.

Positive experiences of dog-walking interactions

The point was made that for some people with aphasia, dog-walking might be their main social interaction. Many participants reported that other dog-walkers were supportive of the person, especially if they knew them. Even when strangers were encountered, many people with aphasia were able to explain why communication was difficult, perhaps using a support card or badge:

> "Sometimes I've got to say sorry I've had a stroke and then they understand." (P2)

In some cases, the person actually found dog-walking interactions easier than other social encounters:

> "You meet people I wouldn't normally see. If they have a dog, it's easy." (P2)

This person's wife interpreted this as being:

> "because it's a fleeting- you know, it's not going into any depths, it's just very general- you know, talk about the weather, talk about their dogs, and you know, so even if he's not saying the right thing, it doesn't seem to matter... because they're just having a little chat on their way and mostly they're just talking about their dogs." (F2)

This participant went on to identify the benefit of using the dog as an excuse to end an interaction if it was getting too difficult, an observation that was echoed by another participant:

> "It would be good with the dog 'cause it could at least get you away if you was struggling a bit... "I'll have to go because that dog's needing awa [away]", but actually it's you." (F7)

4. Practical issues

A minor theme of practical issues in managing the dog post-stroke was also generated. Some of these were mentioned in the written list of advantages and disadvantages presented by F2, such as the burden of responsibility, the financial burden (e.g. food, vet bills) and potential problem of talking to a vet if the person with aphasia was on their own. Another participant (P5) mentioned the fact that other family members had needed to take on daily responsibilities such as feeding and walking the dog. A further issue was the potential for accidents because of the person's reduced mobility following the stroke:

> "You fell over (the dogs) a couple of times." (F8)

Discussion

The aim of this study was to explore the experiences that people with aphasia have of dog ownership during their post-stroke adaptation. Themes derived from the data show how dog ownership interacted with the psychosocial impact of aphasia, specifically the extent to which the dog supported the person as they learned to adapt to their new circumstances or conversely, the extent to which the aphasia adversely affected the person-dog relationship.

A key finding in this study is the ability of dog ownership to help the person with aphasia to maintain a routine and to motivate them to get out of the house and take part in physical activity. It was even cited as a reason for getting a dog post-stroke. The finding echoes other studies on pet ownership (e.g. Brooks et al., 2018), and this opportunity is as important as a facilitator of well-being in post-stroke aphasia as it is in other long-term health conditions (Code, 2003; McClung et al., 2010). A further benefit of the person with aphasia getting out of the house with the dog identified in the current study was the "breathing space" afforded to a couple. Northcott, Moss et al. (2016) report on the tension that can arise in marital relationships as the couple may feel more "trapped" inside the house together, with the person with aphasia being forced into a position of higher dependency.

A further finding identified in the current study is value of the opportunity to care for and be responsible for another being, albeit an animal. The provision of a role or sense of purpose is discussed in the literature on dog ownership and mental health (Brooks et al., 2018). This is mirrored in the sphere of aphasia, where "an essential element for living successfully is being able to take part in activities that are meaningful and personally rewarding" (Cruice et al., 2006, p.22).

Participants in this study reported on the intuitive calming support provided by their pet and even reported that the person with aphasia may have a preference for the dog over human company. This finding reflects the role of companionship discussed in the research on pet

ownership and mental health disorders (Brooks et al. (2018) and also the value of constancy, acceptance and unconditional affection discussed in the literature on aphasia (Northcott, Moss, et al., 2016).

In the current study, participants also spoke of having fun with the dog, or with each other about the dog. Social companionship has been defined as "the availability of people to do fun things with you" (Hilari & Northcott, 2006, p.18). The value of fun or humour is a frequent motif in research on living successfully with aphasia (Davidson, Howe, et al., 2008; Ford et al., 2018; Northcott, Moss, et al., 2016) and again also occurs in the pet ownership literature (Brooks et al., 2018).

While some participants reported on the frustration caused by the dog's failure to follow commands as a result of confusion arising from the person's communication difficulties, it was frequently observed by participants that the person with aphasia found talking to their dog easier than with humans. This was perhaps linked to the dog's acceptance of their communication difficulties, while interactions with other humans could be frustrating and hence become more limited. Reports on reduced social interactions are extensively reported in the literature on aphasia. This may be particularly the case in rural environments (such as those inhabited by several participants in the current study), where there may be fewer opportunities for social interaction because of fewer community activities and also transport issues (Marsden et al., 2010). In 2003, Davidson et al.'s observational study found that many types of interaction were significantly reduced for people with aphasia compared to people who had had a stroke but who did not have aphasia. Tellingly, one type of interaction in which there was no significant difference between the two groups was "talking to pets".

The finding of the current study that dog walking can provide opportunities for easy social communication is also reported in the literature on people with mental health disorders

(Brooks et al., 2018) and echoes Stern et al.'s (2013) discussion of the "low stress casual interactions" (p.578) that are afforded by dog-walking. This finding is highly relevant for people with an acquired communication problem, as the values of "small talk" and shared interests (such as dogs) are discussed in the literature on aphasia (Davidson, Worrall et al., 2008). A further benefit of having a dog identified by participants in the current study was the provision of an excuse to curtail an interaction as soon as the person with aphasia felt out of their depth. However, it cannot be ignored that some participants reported more negative feelings around dog-walking interactions, which were either avoided or perceived with regret as being shorter than they would have been before the stroke. Specific adverse incidents which arose were felt not to have been directly connected to the person's communication difficulties, but the participants in these cases also identified avoidance behaviour, indicating some anxiety around these fleeting interactions.

Further negative aspects of dog ownership for the person with aphasia were also apparent in the findings. The initial sense of disruption apparently experienced by some of the dogs in response to changes with the person with aphasia is not mentioned in literature on pet ownership and other long-term disorders. This may be because of the sudden onset of a stroke compared with the more gradual onset of mental health disorders, for example. In the case in which the dog's initial disquiet remained and its behaviours worsened, it is of note that while this was attributed to the stroke, alternative or additive factors (e.g. the age and breed of the dog) were considered by the participant. Again, these factors are not discussed in the literature on pet ownership. Islam and Towell (2013) discuss the demographic variables of cat or dog owners as predictors of outcomes, but not the variables such as age and breed of the pets themselves.

In addition to adverse changes in the dog, mixed feelings about the dog on the part of the person with aphasia were reported, more commonly in the early stages. The potential for

irritation felt by people with long-term health conditions towards their dogs is elsewhere reported (e.g. Stern et. al. 2013). The findings of the presence of the dog causing additional tension between a couple when the spouse felt forced to take on more of the care of the dog or where there was a new clash in approaches towards managing the dog are not directly paralleled in the literature, although the demands and conditions of pet ownership are cited as negative aspects (Stern et al. 2013).

Other more practical issues discussed in the literature on pet ownership and people with mental health problems such as the financial or general care burden (Brooks et al. 2018) were reported by participants in the current study. Mention was also made of potential need for somebody to communicate on the behalf of the person with aphasia, for example at the vet, which could be difficult if they lived alone. The issue of dealing with the illness, injury or death of a dog did not arise during the course of these interviews, but for a person trying to come to terms with their own difficulties, these could be potentially devastating.

Clinical implications

As Islam and Towell (2013) assert, companionship from a dog should never be regarded as an alternative to human support, but rather "as a unique contribution above and beyond the effects of human support" (p.153). As such, health care workers need to bear in mind the importance of dogs in the lives of the stroke survivors that they see. There are an estimated 11.5 million dogs kept as pets in the UK, with 30% of households having at least one dog (Brooks et al. 2018). Clinicians are accustomed to taking into account the wider human social network of people with aphasia when they plan rehabilitation and support, in order to understand barriers and facilitators. The person's dog or dogs need to be included in this network. For example, if the dog is felt to facilitate communication, it could attend therapy sessions, or opportunities for social interactions that involve the dog could be explored; if issues have arisen with the dog,

clinicians should be prepared to support discussions to find solutions, as they would if tensions arose in human relationships as a result of the aphasia. Such solutions might be further training for the dog, or negotiations with other family members or friends around care. These considerations could have a significant impact on outcomes of rehabilitation because as this study has demonstrated, the power of dogs to touch the lives of their owners, for better or for worse, should not be underestimated.

Reflexivity

The first author, who conducted the interviews, acknowledges that while she is experienced as a speech and language therapist in working with people with aphasia, she is relatively inexperienced as a qualitative researcher. This may have contributed to the limitations which are outlined below. The author also acknowledges her potential bias as a dog-owner and also as someone who has discussed issues surrounding adaptation to post-stroke aphasia with service users and their families throughout her professional career.

Limitations

It is acknowledged that while every effort was made to support the communication of the participants with aphasia during the interview process, in some cases it was difficult for them to expand on their responses because of their limited abilities to express themselves. Where they were interviewed as part of a dyad, the perspective of the relative or carer may have been more prominent. In future research, it may be helpful to interview and analyse the data of the participants with aphasia and their relatives or carers as separate groups, in order to allow for a comparison between these perspectives. It is also acknowledged that the interviews varied in terms of their length and hence in the depth or richness of the information that was provided. This is reflected in the number of quotes attributed to some of the participants relative to others.

In addition, as transcripts or summary findings were not returned to the participants for checking, it is possible that opportunities to gather further data were missed, and due to the small sample size, it is unlikely that data saturation was achieved, limiting the generalisability of findings.

Furthermore, while this study has demonstrated that the benefits of dog ownership for people with post-stroke aphasia are not universal, it is not clear what factors might be related to positive or negative experiences. As Islam and Towell (2013) state in light of their mixed evidence on the impact of pet ownership, further work might explore influences such as length of ownership, time spent with the pet, perceived quality of the interaction, any additive effects of multiple pets and the age of the owner. To this end, it is acknowledged that it would have been beneficial to have collected further demographic data about the participants, for example the severity of their aphasia, the presence of additional cognitive difficulties and comorbidities and details of their functional abilities.

It would also be useful to explore factors relating to the dogs themselves, such as age and breed. Some data presented here suggests a perceived relevance of these factors but it was not within its scope to explore them in the current study without the expert input of an animal behaviourist.

Conclusion

This study has explored the experiences of dog owners with aphasia as they adapt to life post-stroke. It suggests that the relationship between the person and their dog or dogs can afford significant benefits in terms of companionship, a sense of role and routine, reducing tension around communication and facilitating interactions with other humans. However, adverse changes in the relationship were also apparent, either in terms of the dog's behaviour or in terms of the person with aphasia's attitude towards the dog. As professionals working with

people with aphasia consider their human relationships, with the challenges and opportunities that these present, they should also consider the relationship with the dog.

Acknowledgements

We would like to thank all the participants, and the Speech and Language Therapists across NHS Grampian who helped recruit them. We would also like to thank Thérèse Lebedis and Lyndsay Alexander for commenting on an earlier draft of this manuscript. Finally we would like to thank NHS Grampian Research and Development Department for supporting this project.

Disclosure of interests

The authors report no conflicts of interest.

References

Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing qualitative description in health care research. *Global Qualitative Nursing Research*, *4,* 1-8.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.

Brooks, H.L., Rushton, K., Lovell, K., Bee, P., Walker, L., Grant, L., & Rogers, A. (2018). The power of support from companion animals for people living with mental health problems: A systematic review and narrative synthesis of the evidence. *BMC Psychiatry, 18*, Article 31.

Code, C. (2003). The quantity of life for people with chronic aphasia. *Neuropsychological Rehabilitation, 13*(3), 379-390.

Cruice, M., Worrall, L., & Hickson, L. (2006). Perspective of quality of life by people with aphasia and their family: Suggestions for successful living. *Topics in Stroke Rehabilitation, 13*(1), 14-24.

Davidson, B., Howe, T., Worrall, L., & Togher, L. (2008). Social participation for older people with aphasia: The impact of communication difficulty on friendship. *Topics in Stroke Rehabilitation, 15*(4), 325-40.

Davidson, B., Worrall, L., & Hickson, L. (2003). Identifying the communication activities of older people with aphasia: Evidence from naturalistic observation. *Aphasiology, 17*(3), 243-264.

Davidson, B., Worrall, L., & Hickson, L. (2008). Exploring the interactional dimension of social communication: A collective case study of older people with aphasia. *Aphasiology, 22*(3), 235-257.

Ford, A., Douglas, J., & O'Halloran, R. (2018). The experience of close personal relationships from the perspective of people with aphasia: Thematic analysis of the literature. *Aphasiology, 32*(4), 367-393.

Fylan, F. (2003) Semi-structured interviewing. In J. Miles & Gilbert. P. (Eds.), *A handbook of research methods for clinical and health psychology* (pp. 65-78). Oxford University Press.

Fotiadou, D., Northcott, S., Chatzidaki, A., & Hilari, K. (2014). Aphasia blog talk: How does stroke and aphasia affect a person's social relationships? *Aphasiology, 28*(11), 1281-1300.

Grohn, B., Worrall, L., Simmons-Mackie, N., & Hudson, K. (2014). Living successfully with aphasia during the first year post-stroke: A longitudinal study. *Aphasiology, 28*(12), 1405-1425

Hilari, K., & Northcott, S. (2006). Social support in people with chronic aphasia. *Aphasiology, 20*(1), 17-36.

Islam, A., & Towell, T. (2013). Cat and dog companionship and well-being: A systematic review. *International Journal of Applied Psychology, 3*(6), 149-155.

Le Dorze, G., Tremblay, V., & Croteau, C. (2009). A qualitative longitudinal case study of a daughter's adaptation process to her father's aphasia and stroke. *Aphasiology, 23*(4), 483–502.

Le Dorze, G., Salois-Bellerose, E., Alepins, M., & Croteau, M.-C. Hallé. (2014). A description of the personal and environmental determinants of participation several years post-stroke according to the views of people who have aphasia. *Aphasiology, 28*(4), 421-439.

Lefrance, C., Garcia, L. J., & Labreche, J. (2007). The effect of a therapy dog on the communication skills of an adult with aphasia. *Journal of Communication Disorders, 40*(3), 215-24.

LaGrone, S., Joseph, C., Johansson, H., Enburg, B., & Franzén, E. (2020). Choreographing life-experiences of balance control in people with Parkinson's disease. *BMC Neurology, 20,* Article 50.

Macauley, B.L. (2006). Animal-assisted therapy for persons with aphasia: A pilot study. *Journal of Rehabilitation Research and Development, 43*(3), 357-366.

Marsden D, Quinn R, Pond N, Golledge, R., Neilson, C., White, J., McElduff, P. & Pollack, M. (2010). A multidisciplinary group programme in rural settings for community-dwelling chronic stroke survivors and their carers: A pilot randomised controlled trial. *Clinical Rehabilitation, 24*(4), 328-41.

McClung, J. S., Gonzalez Rothi, L.J., & Nadeau, S.E. (2010). Ambient experience in restitutive treatment of aphasia. *Frontiers in Human Neuroscience, 4,* Article 183.

Michallet, B., Tétreault, S., & Le Dorze, G. (2003). The consequences of severe aphasia on the spouses of aphasic people: A description of the adaptation process. *Aphasiology, 17*(9), 835–859.

Northcott, S., Marshall, J., & Hilari, K. (2016). What factors predict who will have a strong social network following a stroke? *Journal of Speech Language and Hearing Research, 59*(4), 772-83.

Northcott, S., Moss, B., Harrison, K., & Hilari, K. (2016). A systematic review of the impact of stroke on social support and social networks: Associated factors and patterns of change. *Clinical Rehabilitation, 30*(8), 811-831.

Nyström, M. (2006). Aphasia- an existential loneliness: A study on the loss of the world of symbols. *International Journal of Qualitative Studies on Health and Well-being. 1*(1), 38-49.

Parr, S. (2007). Living with severe aphasia: Tracking social exclusion. *Aphasiology, 21*(1), 98-123.

Parr, S., Byng, S., & Gilpin, S. (1997). *Talking about aphasia: Living with loss of language after stroke.* Open University Press.

Perez, A., Green, J., Starchuk, C., Senior, A., Compton, S., Gaudet-Amigo, G., Lai, H., Linke, B., & Patterson, S. (2020). Dental faculty and student views of didactic and clinical assessment: A qualitative description study. *European Journal of Dental Education.* Advanced online publication.

Polit, D. F., & Beck, C. T. (2014). *Essentials of nursing research: Appraising evidence for nursing practice* (8th ed.). Wolters Kluwer.

Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing and Health, 23,* 334-340.

Scottish Government. (2018, March 29). Scottish Government Urban Rural Classification 2016. Retrieved September 1, 2020, from https://www.gov.scot/publications/scottish-government-urban-rural-classification-2016/pages/2/

Stern, S.L., Donahue, D.A., Allison, S., Hatch, J., Lancaster, C., Benson, T., Johnson, A., Jeffreys, M., Pride, D., Moreno, C. & Peterson, A. (2013). Potential benefits of canine companionship for military veterans with posttraumatic stress disorder (PTSD). *Society and Animals, 21*(6), 568-581.

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care,* 19, 349-357.

Zimolag, U., & Krupa, T. (2009). Pet ownership as a meaningful community occupation for people with serious mental illness. *American Journal of Occupational Therapy, 63*(2), 126-37.

Appendix 1.

Interview guide questions (to be adapted/expanded upon as appropriate):

1. Relationship with dog pre-stroke: how old was the dog when the person had the stroke? Training and general obedience pre-stroke? What was the person's relationship with the dog like before they had the stroke? (e.g. was the dog closest to that person, or to another family member?)

2. Immediately post-stroke: how did the person with aphasia and the dog react to each other in the early days, from hospital to return to home? Changes in the relationship?

3. Longer term: how did the person with aphasia and the dog adapt to changes over time? (e.g. in terms of management/response: modifications in how the person with aphasia controlled the dog? Dog's adaptations to the person's changed communication?)

4. Problems in managing the dog as a direct result of the aphasia? (e.g. not being able to call its name or give verbal commands). Resolutions to problems?

5. Problems in interacting with other dog owners when being out with the dog? (e.g. dealing with dog's behaviour; social rules of dog management)

6. Benefits of having a dog when trying to learn to cope with the long-term effects of aphasia? (e.g. comparison between interacting with a dog and interacting with another human;

benefits of having a dog present when interacting with other humans; general quality of life impact.)

7. What advice would you give to other people in the same position? (e.g. anything you would have done differently? Anything that would have helped you/your family member with regards to the ownership of the dog and any difficulties that arose?)

Appendix 2

Coding index

Adjustment by dog

- Early stages (time of stroke, while person with aphasia in hospital, when person with aphasia first home)
- Dog returns to normal in general (including dog acquired post stroke)
- Dog changes for better/demonstrates specific adaptation
- Dog adapts to changes communication
- Negative changes (including increased manipulation, over-excitement, change in allegiance, adverse reaction to health/care staff, specific adverse incidents

Adjustment by person with aphasia

- Early stages
- General adjustment- getting back to normal
- Positive communication with others: person with aphasia manages, other people are helpful
- Negative communication with others: difficult, other people not helpful
- Family members concerns/reactions re person with aphasia mood/changes in communication
- Dog walking: positive- other dog-walkers supportive, easier social context
- Dog walking: negative- specific adverse incidents, general issues, avoidance

Person with aphasia's relationship with dog

- Early stages (feelings re dog while in hospital, reaction to dog when first home)
- General psychological benefits of having dog in post-stroke adjustment
- General physical benefits
- Negative aspects (reduced control, increased frustration, reduced interest, specific communication issues)
- Family members concerns/reactions re person with aphasia - dog relationship

Physical & Practical issues

- Coping with vet interactions
- Care burden
- Financial burden
- Need for other family member to take over care
- Mobility problems (tripping over dog; dog gets in the way)

Table 1. Demographics of individuals with aphasia and their dogs

ID	Gender of PWA	Who was interviewed	Time since stroke	Age of PWA at time of stroke	Location (settlement type*)	Number and breed of dogs	Age of dog(s) at time of stroke	Comments on dog(s) pre-stroke
1	M	PWA + wife	4y	45	Other urban area	2 cocker spaniels	8y + 1y	1 dog formally trained. Both obedient.
2	M	PWA + wife	5y	67	Small town	1 Jack Russell	**	**
3	M	PWA + wife	1y	70	Large urban area	1 cocker spaniel	5m	Formally trained. Obedient.
4	M	PWA	5m	72	Large urban area	1 bichon frise	5y	Not formally trained. Obedient.
5	F	PWA + mother	1y	49	Small town	1 boxer	5y	Not formally trained. Obedient.
6	M	Wife	7m	99	Rural	1 King Charles spaniel	2y	Not formally trained. Not obedient.

7	M	PWA + wife	2y	54	Rural	1 black Labrador	12y	Not formally trained. Not obedient.
8	F	PWA + carer	1y	74	Rural	2 border collies	10y + 4y	Formally trained as working dogs. 1 dog had behavioural issues.
9	M	PWA + wife	3y	72	Small town	1 border collie	4y	Formally trained. Behavioural issues.
10	F	PWA	2m	53	Other urban area	1 labradoodle + 1 poochon	8y + 3y	Not formally trained. Obedient.

Key: M=Male; F=Female; PWA=Person with aphasia; m=months; y=years

*Settlement type defined by population size according to Scottish Government Urban Rural Classification 2016:

Large urban area: population of 125,000 or more

Other urban area: population of 10,000 to 124,999

Small town: population of 3,000 to 9,999

Rural area: population less than 3,000

** In this case, the dog was acquired post-stroke. Officially it was owned by and lived with the person with aphasia's daughter, but was acquired by her with the intention of the person with aphasia looking after the puppy all day while she was at work. Because of this routine and the close daily contact with the dog, it was deemed appropriate for the person with aphasia to be included in the study.