




Australian parents' experiences of owning an autism assistance dog

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Abstract

Autism assistance dogs (AADs) increase safety for children with autism and their families. Autism assistance dogs can also decrease familial stress and the isolation which families may experience due to fear for their child's safety and judgement from others within the community. Currently there is a paucity of literature on parents' experiences of AADs. Therefore, this study aimed to develop a rich understanding of parents' experiences of owning an AAD. A mixed methods design was utilised, with a qualitative descriptive design and the use of occupational mapping. Eight families were recruited through an Australian AAD programme and participated in semi-structured in-depth interviews throughout 2017. The interviews were analysed thematically. Mobility in the community before and after introduction of the dog was measured using occupational mapping. Families plotted on Google Map printouts the places they frequented before and after placement of their dog. Five major themes emerged from the analysis of the interviews: freedom through restraint; expanding our world; a calming/sensory tool (AAD); "at the end of the day they're dogs"; and, friendship and personal growth. The occupational maps demonstrated a median increase of 8.5 more places and 20.50 km further travelled from home after having the dog for over a year. Families with an AAD experienced an expanded world for the child and their family. Families experienced freedom in the places they could go, decreased isolation due to the safety which the dog provides. Occupational mapping supported the qualitative data, showing increased mobility and decreased isolation of the family. The paradox of freedom through restraint is a new and key finding which requires further exploration. The results provide support for funding and increased awareness of AAD programmes. Future longitudinal comparative studies are needed to explore the long-term impact of AADs on the child and family.

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KEYWORDS

animal-assisted therapy, autism spectrum disorder, family relations, mobility limitations, qualitative research, safety, social isolation

1 | INTRODUCTION

Children with autism spectrum disorder (ASD) experience difficulties in social communication and interaction, as well as restrictive, repetitive patterns of behaviour and interests (American Psychiatric Association, 2013). The behavioural difficulties vary for each child in terms of severity and preferences (Volkmar et al., 2004), as do the presence of common comorbidities such as intellectual impairment, learning difficulties and epilepsy (American Psychiatric Association, 2013). Individuals with ASD may have difficulties processing and interpreting social information and recognising emotions (Sasson et al., 2013), and may display impulsive and unpredictable behaviour such as running away, as well as heightened sensitivity to the sensory environment (American Psychiatric Association, 2013; Burrows et al., 2008). All of these behaviours can be isolating for the child and their family, making mobility in the community and socialisation difficult (Burrows et al., 2008).

Families can become socially isolated as they fear judgement from other families of their child's behaviours, and are concerned for their child's safety (Rao & Beidel, 2009; Tint & Weiss, 2016). Parents of children with ASD report reduced spontaneity and restricted activities outside the home, as all activities must be planned and prepared for, and often become too difficult (Rao & Beidel, 2009). Parents of children with ASD experience higher levels of stress and fatigue when compared with parents of children with other developmental disabilities (Pisula & Kossakowska, 2010; Smith et al., 2010), and this affects both the quality of and time available for activities (Fecteau et al., 2017; Rao & Beidel, 2009). One response to these difficulties is to introduce an assistance dog.

The term 'assistance dog' is inconsistently applied in the literature but may be defined as a 'diverse group of working dogs that are trained to assist humans with different types of disabilities in their daily lives' (Bremhorst et al., 2018). Assistance dogs for children with autism are sometimes referred to as autism assistance dogs (AAD) (Smyth & Slevin, 2010) or service dogs, that is, a dog that works for someone with a disability other than vision or hearing impairment (Assistance Dogs International, n.d.). AAD is the term that will be used throughout this paper. Literature suggests that the presence of an AAD can increase family outings, as well as security in the home and community (Burrows et al., 2008; Tint & Weiss, 2016). The introduction of an AAD to children with ASD can also reduce morning cortisol levels (a physiological indicator of a person's response to stress) in the child and parents (Fecteau et al., 2017; Viau et al., 2010). Concurrently there is a decrease in the parents' perception of their stress levels and the incidence of stress-related disruptive behaviours in the children with ASD (Burrows et al., 2008; Fecteau et al., 2017; Viau et al., 2010). In an evaluation of an AAD programme in Ireland, the

What is known about this topic

- Qualitative studies suggest that autism assistance dogs improve safety; improve motor skills; strengthen relationships and social skills and reduce family stress.

What this paper adds

- The use of in-depth interviews together with occupational mapping illustrated that autism assistance dogs enable an increased freedom, better sleep, expansion of the child and their family's lives, and decreases in the sense of isolation.
- Having an autism assistance dog provides the paradoxical notion of freedom through restraint, however raises concern about loss of the dog and being able to explain that to a child with autism spectrum disorder.

main themes from the qualitative study were: improved safety; improved motor skills; strengthening of relationships and social skills; some drawbacks relating to dog maintenance; and the child not understanding that not all dogs are as friendly as their dog (Smyth & Slevin, 2010). Burgoyne et al. (2014, p.7) also found that parents perceive AADs as facilitating 'child safety, calmness and provision of friendship'.

A safety feature of some AADs is that certain organisations train the dog to lie down, and anchor a child if they attempt to run off (Burrows et al., 2008). The dogs also provide comfort and companionship to the child, lie across the child's lap to provide them with deep pressure, as well as providing other sensory input, thus calming them (Burrows et al., 2008; Smyth & Slevin, 2010). Currently there is scant literature on parents' experiences of AADs. Furthermore, there is a lack of numerical data exploring the impact of the dog on the family's mobility within the community. Therefore, this study aims to generate a rich understanding of the parents' experiences and perceived benefits of owning AADs.

2 | METHODS

A mixed methods design was utilised, involving a qualitative descriptive approach combined with occupational mapping. A qualitative descriptive approach was chosen because it allows rich data to be collected and also has the ability to explore taken for granted ideas (Stanley, 2014). Occupational mapping was used to stimulate memory and facilitate rich discussion (Huot & Rudman, 2015).

2.1 | Sampling and recruitment

Purposive sampling, specifically criterion sampling (Sandelowski, 2000) was used as all participants were required to be clients of the same programme and satisfy the criteria to receive an AAD, including: being aged between 3 and 8 years, with a confirmed diagnosis of autism, severe deficit in verbal and non-verbal communication skills, severe impairment in functioning, limited social interaction ability, severely repetitive behaviours and severe and frequent absconding tendencies. The children are also screened for any aggressive behaviours and are closely monitored during the intensive training programme to ensure the safety of the dog and child. The AADs in this programme are predominantly labrador retrievers and are trained to assist with safety while out of the house. The dog is connected to the child with a tether, while the parent has control of the dog with a lead. The dogs are trained to stop at kerbs, steps and stairs and to prevent bolting behaviours by lying down if the child attempts to run. The AADs are also trained to interrupt repetitive behaviour patterns by distracting the child.

All eligible families had received their dog a minimum of a year ago. A letter was sent to all 18 eligible families of one AAD programme, calling for volunteers for the study. This letter was sent by the organisation's administration staff to all eligible families, and included the participant information sheet, consent form and the contact details of one of the authors who was not involved in the data collection process. The information sheet explained that their decision to be involved or not was not disclosed to the AAD agency and that their decision would therefore not impact on the services they were receiving. After a participant parent emailed, the researcher then telephoned the potential participant to further explain the study and make an appointment time if they wished to proceed.

This study was approved by the University of South Australia's Human Research Ethics Committee. All participants provided informed consent to participate and were not compensated financially for their time. Confidentiality and anonymity were maintained through the use of pseudonyms for the participants and the dogs.

2.2 | Data collection

After informed consent was received, appointments were made with participants to engage them in the semi-structured interview and occupational mapping process, within the participant's home or workplace.

2.2.1 | Qualitative interviews

Data were collected through semi-structured in-depth interviews lasting between 30 and 90 min which were digitally recorded. An interview guide with questions focused on the parents' experiences of having the AAD from the programme was developed through

discussion within the research team and consultation of previous AAD and qualitative methodological literature.

2.2.2 | Occupational mapping

Occupational mapping (Huot & Rudman, 2015) involved participants plotting the physical places they visited both before and after they had the dog. Two separate Google maps of the participant's suburb and the wider Adelaide area, or in the case of rural participants, three Google maps (their suburb, wider area and a map of the whole of Adelaide) were printed on A3 paper. The participant then plotted with coloured pens the places they visited before and after having the dog. These maps were primarily utilised to stimulate memory, extend participants' thinking and create depth in the discussion regarding changes that the dog had made to the family members' lives (Creek, 2010; Huot & Rudman, 2015). The participants were asked to describe the places which had changed on the map and why the changes may have occurred. The maps facilitated richer discussion and provided another form of evidence to support the qualitative data around families' experiences of an AAD.

2.3 | Data analysis

Interview recordings were transcribed verbatim and analysed thematically. The first step was line-by-line coding, conducted by assigning codes to each segment of text (Liamputtong, 2013; Stanley, 2014). Some sections of the transcript were coded by two authors independently and then compared to increase rigour (Krefting, 1991). Next, the codes were compared and similar codes collapsed into categories. These categories were then written onto post it notes and arranged manually into larger themes (Stanley, 2014). The categories and themes were then rearranged by all four authors so that the sections suited each theme and gave an accurate picture of what the participants were conveying (Green & Thorogood, 2014). Member checking, which involved sending a summary of the results to all participants with an invitation to respond within 1 week, was used to ensure that the data analysis accurately reflected how the participants felt about the topics discussed (Stanley, 2014). The data were triangulated with the use of interviews and occupational maps, and triangulation of the researchers analysing the data, which increased the confirmability and dependability of the data (Krefting, 1991; Stanley, 2014).

To analyse the maps, the number of places visited before and after the family had the dog were counted (number of dots on each map) and recorded on an Excel spreadsheet. The furthest distance travelled before and after the family had the dog was calculated using Google maps to enter the distance between the house and the places furthest out on the map (kilometre reading was taken from the best route option). Descriptive frequencies were calculated to determine any before and after differences with the number of places visited and distances travelled. Further statistical analysis

was not appropriate as the numerical data were used to supplement the data gathered through the interviews.

3 | FINDINGS

A total of eight of the eighteen families who had received a dog from the AAD Programme, participated in this study. The children were aged between 7 and 12 years and had the dogs for between 1 and 8 years. Both mothers and fathers participated in the interview. Further information regarding participants has been omitted to maintain participants' anonymity.

3.1 | Interview findings

Five main themes emerged through thematic analysis of the transcripts. These were: freedom through restraint; expanding our world; a calming/sensory tool; "at the end of the day, they're dogs"; and friendship and personal growth. These themes will be discussed below and supported with the use of direct quotes. Pseudonyms have been used for the names of children, parents and dogs for confidentiality.

3.2 | Freedom through restraint

Often, parents of children with severe ASD need to strap their child in a pram for safety when leaving home. The AAD is a method to keep their child safe when they become too big for a pram or do not like sitting in a pram all the time. Participants reported that AADs have been considered a form of restraint by the government. They also expressed concern that, due to the perceptions of restraint, the government recently requested a change of belt to a Velcro fastening when connecting the children to the dogs. All families within this study stated that there was no point to the belt if it was attached with Velcro, as the child would be able to rip the belt off and run away. Many parents acknowledged that although the belts could be considered restraint, they are loose, and they are saving their child's life. Despite AADs being considered a form of restraint, participants stated that their child had more 'freedom' with the AAD than the pram, and that restraint in some way was necessary for their family's freedom. Due to walking places, rather than sitting in a pram to go anywhere, the children improved in their core strength, walked in a straighter line and stretched tight calf muscles.

He couldn't believe he was walking up and down the footpath and was looking around. It was the first time that he'd been out walking by himself. Otherwise he would be in a pusher... it was like the world opened up for him. It was amazing... He was restrained in a way, but it wasn't a big strap over him in a pusher... he was more free (participant 2)

A harness attached the children to the dogs, so that they were unable to run away and/or cause harm to themselves or family members. Children with ASD often have limited understanding of road safety, and therefore run onto busy roads or away from parents, risking their life and others who try to restrain them. A key function of the AAD was to lie down and anchor the child when the child attempted to 'bolt'. This safety feature was a key reason many applied for an AAD, and participants reported the feature has saved many lives. The children also picked up on the commands of the dog, and road rules, such as 'standing' at traffic lights and responded to these commands which led to increased safety awareness when the family was without the dog.

I mean he's literally saved Lucas' life... several times... you know I've gotten him out the car at school and he's taken off across the road with a car coming and Toffee's anchored... you know that's got to go down as pretty good (participant 1)

As well as the dogs providing freedom for their child, the parents had free hands and the freedom to talk to other people or relax, as they knew that their child was safely attached to the dog. The dogs would also alert the parents when the child woke up, which increased safety. One dog began alerting the parents of their child's seizures during the night.

The first night Toffee came home, Lucas slept through... I have my life back, I've got sleep (participant 1)

Even coming here to the caravan park is not something we would have done without Oscar to help keep an eye. It's almost like an extra set of hands...(participant 6)

3.3 | Expanding our world

Before receiving their AADs, parents were reluctant to go out with their child due to safety concerns of the child running off, and feeling as though the distress their child showed, at times, being in public places was not worth it. This resulted in parents feeling trapped and isolated at home with their child.

We were feeling quite isolated in that because we couldn't manage him safely and because he would find it really overwhelming we just stopped doing things (participant 3)

With the child attached to the AAD, families were able to try more things and stay places longer as their child was calmer and safely attached to the dog. This reduced the isolation of the parent and child as

they were no longer 'trapped' within their home, and had the opportunity to experience the world.

He's enabling for Bradley. Like we can go places that we would never be able to go without the dog, like a concert for example. He would have been stressed, and still is if I don't take the dog for whatever reason (participant 8)

Public perceptions became more positive and helpful towards the children and their behaviours when the dog was present. The dog became a visual cue to help the community understand the child has a disability and their behaviours were caused by something deeper than a 'lack of discipline'. This perceived increase in public understanding increased the parents' comfort in leaving the home.

Before Frankie, if I took John to the shop and he had a meltdown in the shop like people used to look at you as if [to] say "discipline your child" you know. And whereas you when you've got Frankie... people more walk up and like "is there anything I can do to help you?" Like their whole attitude changes towards what's going on (participant 5)

3.4 | A calming/sensory tool

The children displayed increased calmness and a decrease in stress-related behaviours, as well as the number, severity and length of meltdowns. The dog also provided a visual cue for transitions and allowed the child to move between activities with less distress.

Life before, it was a fuzz. He was all about smacking his head on the floor and screaming, you know a high pitched, murdering scream. And that's all faded away now... (participant 1)

Using Buddy as a tool to get Chris to school was huge. It doesn't sound like much but the stress levels were up here... (participant 4)

The dogs also provided sensory stimulation and a calming presence through the following behaviours: deep pressure from the dog lying on the child, fiddling with the dog's ears and medallion, and being able to rub their feet on their dog. Reassurance and stability for the children in stressful situations was another benefit, and the children eventually sought out their dog when feeling overwhelmed. This meant that the family could reduce the amount of sensory and fiddle tools carried with them, instead only needing the dog and noise cancelling headphones. Some parents allowed the dog to sleep on the bed with the

child, which provided deep pressure and reassurance to the child, helping them to sleep.

And every time it got a little bit too much for him he would just come back and snuggle into Oscar and stick his head into Oscar's side and then you could just see, he would just calm down (participant 6)

This reassurance and calming presence was a particularly useful tool in both extending the amount of time that the child was able to sit for and during stressful situations such as hospital visits. The dogs were able to enter the hospital, and in most cases lay on the child's bed until entering theatre, providing deep pressure and reassurance to the child. Many parents were not sure how they would have managed the situation and kept their child calm without the dog.

He sat at that table, with Toffee at his feet, playing with his Ipad whilst we had a coffee. I nearly cried. He's never sat like that in my life... (participant 1)

3.5 | "At the end of the day, they're dogs"

Participants discussed some of the logistical implications of owning an AAD. To maintain the high level of training and skills the dogs had received, the dogs were not meant to stay at home alone for more than a few hours. They also could not be left at school with a teacher who had not received handling training. For some parents, this, as well as the grooming, vet schedule, feeding and keeping up on training was a large commitment. Many participants enjoyed this as they considered it something special which was theirs, however for others, the constant presence and consideration of the dog could be frustrating.

Avi likes to eat rocks. He got cut open twice. That was unexpected but it could happen with any dog. At the end of the day, they're dogs (participant 7)

She's a very special dog that requires a whole level of consideration beyond what a pet dog would (participant 3)

Despite the many benefits, they are live animals, and challenges arose which required management. This included careful consideration of outings, according to their child's limits. New and stressful behavioural challenges also occurred. One child took their frustrations out on the dog which needed to be handled carefully for the safety of both the child and the dog.

Not that long ago we went up to the playground... Liam just got so impatient we just arrived and I hadn't detached him so he could have a play and he literally just kicked her in the chop... those moments really

TABLE 1 Distance travelled and number of places visited

N = 8	Distance from home before	Distance from home after	Difference in KM	Places visited before	Places visited after	Differences in places visited
Median	23.10	100.55	20.50	6.50	14.00	8.50
Percentiles						
25	8.75	34.80	10.13	4.00	11.75	5.25
50	23.10	100.55	20.50	6.50	14.00	8.50
75	83.63	168.00	87.83	9.00	25.75	20.00

stand out for me because whenever she gets hurt I feel quite sick really (participant 3)

Families considered how they may manage the dog passing away, and how they would explain this to their child. Preparations included speaking to their child about the dog passing away one day, organising to have a therapy dog in the home when their dog is close to passing away and getting a dog privately trained to have public access rights to help them manage their anxiety in public when their dog retires or passes away.

I only worry about what's going to happen when he goes. We will put a pets for therapy dog in, which might ease it slightly. So there is not just this big gaping hole suddenly. But that's unavoidable. But the good that comes from him outweighs that (participant 1)

Due to infection risk at the zoo and in particular sections of the hospital, other arrangements needed to be made for the child's safety when visiting these places. Parents managed these places with a large stroller or avoided the places. Some places, such as restaurants, still did not understand the necessity for the dogs and their legal rights. This led to the families being refused entry or having to give long explanations and stand their ground on their legal rights.

The girl said "you can't bring him in, no dogs allowed in the café". And I said, "he's a working dog, he's a guide dog". Bradley's bouncing up and down and clearly we aren't regular customers. And she goes "no, no, no, no dogs in the café, you can sit on the outside table". And I said "look we would quite happily sit out alfresco style, but there are none there" (participant 8)

3.6 | Friendship and personal growth

One of the main reasons many parents applied for the dog was for companionship for their child, as their child found communicating with others difficult and often spent time alone. The children spent time leaning into their dog, reading to them, watching TV with them and considered them a friend. Some also used their dog to boost their confidence in stressful situations, such as speaking in public,

which allowed them to participate in activities which they would have missed out on previously.

He's her friend, I'll say her friend because she really only has one. It's him. She's had friends that come and go... Whereas Avi doesn't care less. He's just her friend. He's the one that—we'll come home and find her, curled up in bed, cuddling him (participant 7)

Before the participants received their dogs, many parents were not sure if their child would ever communicate verbally. Some children began talking after they received their dog due to the child's interest in interacting with the dog and learning the words for things. The dogs also attracted attention to the child, and some children used the dog as an icebreaker. Getting other children around allowed them to develop social skills. Empathy was also developed through their dog, feeling sad when they hurt it and hence when they hurt other people.

His first proper sentence was "Oscar come" because he wanted Oscar to come to him. And because Oscar is so highly trained, he was like okay, that's what I do. So Corey was like okay, I got instant gratification for speaking and I got what I wanted... So it was like "Oscar sit, Oscar stay, Oscar down" (participant 6)

3.7 | Occupational maps

As indicated in Table 1, median increases demonstrated that families travelled to 8.5 more places and 20.50 kilometres further than prior to receiving their dog, noting that all families had owned their dogs for at least a year. This aligns with the parents' reports of feeling isolated and trapped within their homes before having the dog and having their world expanded when they received their AAD to safely mobilise with their child.

4 | DISCUSSION

A qualitative descriptive approach, in conjunction with numerical data from occupational mapping, was used within this study to explore parents' experiences of the AAD programme and the influence which this programme has upon family mobility within

the community. The key theme arising from this study, 'freedom through restraint', highlighted increases in safety, mobility and increased family mobility for the child and family. This theme concurs with previous findings that AADs can provide safety for the child by preventing the child from running away, thereby providing both parents and child with a sense of security and decreased stress levels (Burrows et al., 2008; Smyth & Slevin, 2010). Parents are happier and more at ease leaving the home after having an AAD, allowing them to experience new things, such as going on holidays (Smyth & Slevin, 2010). This theme is further supported by the findings of the occupational mapping approach, that an increased distance was covered during outings after acquiring the AAD. A new finding from this study was the sense of freedom and peace of mind stemming from the dog sleeping with the child, improving sleep for the family and alerting the parents when the child woke up or in one case, was having a seizure.

Although the attachment to the dog is considered 'restraint' where restraint is defined as physically restricting someone's movement (Mohr et al., 2003), paradoxically, the restraint provides freedom and wellbeing for the child and their whole family. For the parents in this study, this freedom outweighed any negatives from restraint of the child. Children with ASD have difficulty in orientation and coping with traffic rules and the environment (Falkmer et al., 2004). However, many guidelines and reports state that physical restraint should not be used unless there is an extreme case which may result in damage or injury to the person or others around them (Langone et al., 2014). Further, the welfare of the dog needs to be considered and most Australian states and territories do not permit restraint unless the child has a behaviour support plan (Howell et al., 2016). The freedom from restraint is in contrast to previous research which has focused on the benefits or use of restraint for self-injurious behaviour (Jennett et al., 2011; Langone et al., 2014; Ryan & Peterson, 2004) or on the reduction of restraint, or self-restraint for self-injurious behaviours (Langone et al., 2014; Ryan & Peterson, 2004).

There is also a wealth of research on the use of restraint in the psychiatric setting for safety and calming, in which restraint is now discouraged or indeed banned due to the possible physical harm and psychological damage restraint can cause (Mohr et al., 2003). Limited research can be found, however, on the use of restraint when walking with a child with ASD. This form of restraint differs in many aspects from other forms of restraint within the literature, such as the presence of seclusion which commonly accompanies restraint, as these children become less secluded due to the use of 'restraint' (Brown et al., 2012; Taylor et al., 2012). Further, the practice of restraint in the context of an AAD lacks the aspects which cause long-term trauma and psychological damage. As found in this study, restraint in the context of an AAD comes with the additional benefits of providing friendship and a sensory/calming aspect, both of which may temper the concerns related to restraint. Participants within this study discussed many other forms of 'restraint' which they had used when walking with their child to keep them from running off including using a large pram, and physically holding onto the child's

arm. Parents reported that if it was not for the dog, they would need to find another method, or would be isolated within their home.

It is of note that occupational mapping has not previously been used in exploring the lives of families with a child with ASD; however, the results of this study have demonstrated the value of occupational maps in quantifying changes in the families' levels of isolation prior to having an AAD. Findings from the occupational maps supported the qualitative findings, particularly in relation to finding freedom through restraint and an expanded world. The occupational maps showed a trend in the increase in the number and distance of places travelled to after the placement of the dog. This increased number of outings and distance travelled also supports the qualitative finding that AAD can increase normality for the family members in terms of reducing feelings of isolation and that they are missing out on things in life.

In contrast to the benefits of this additional freedom for families, it is clear that parents also experienced frustrations in relation to lack of public understanding about access rights which resulted in them being prevented from entering a business. A briefing paper from the UK House of Commons also drew attention to this public access issue, explaining that 75 per cent of guide dog owners have been refused entry to a public place, business or taxi, despite legal requirements to make reasonable accommodations for people with disabilities (Bennett & Desai, 2016). Despite these frustrations, the literature highlights parent perceptions that the presence of an assistance dog in public settings tends to elicit more positive attention than being without a dog, with people behaving more responsibly and considerately to children with ASD (Burgoyne et al., 2014; Burrows et al., 2008).

Findings of this study highlighted concerns of families about the loss of the dog through retirement or illness, and how to explain that to their child with ASD who has limited verbal language skills and in some cases limited understanding. This finding is supported by Burgoyne et al. (2014) who raised the issue of how children with ASD will cope with the loss of a dog. Previous studies have explored the grief experienced following the death of other types of assistance or companion animals, some likening the loss to the grief experienced by losing a close family member or friend (Kwong & Bartholomew, 2011; Nicholson et al., 1995). There does not appear to have been any studies specifically on the loss of an AAD, therefore, future studies are needed to explore the long-term impacts which the loss of an AAD may have on a child with ASD and their family.

4.1 | Implications

The findings from this study substantiate the benefits that an AAD can have on children with ASD and their families. These findings provide support for funding and raising awareness of the AAD programme to families of children with ASD, as well as health professionals to increase understanding of the possible benefits and the purpose of an AAD. They provide information which can be used

when talking to families about getting an AAD and assist in informing the family decision making.

4.2 | Limitations and recommendations

A limitation of this study was that the volunteering process may have resulted in more people with positive experiences being prepared to participate than those with neutral or negative experiences. Other participants may have wanted to volunteer but not felt able to, given the demands of caring for a child with autism requiring high levels of support. A further limitation was the reliance on memory to complete occupational mapping, as some of the families needed to remember up to 8 years ago which may have led to some errors in reporting the places visited before and after having the dog. A child can demonstrate a great deal of developmental progress in 8 years, so some of the changes may also have been due to developmental change rather than the AAD. A future study could use GPS technology to map the places that families visit before and after having their AAD to increase accuracy. This exploratory qualitative descriptive study gives rich and in-depth data of parents' experiences of this programme and contributes to the evidence of the impact the dogs have on families' mobility. However, future research, could go beyond self-reporting and subjective measures, and incorporate objective measures to determine the impact of the dog upon the family. A potential research design could involve objective behavioural observations pre and post placement of the dog. A longitudinal comparative design may be well suited to this area to study the long-term effects of AADs. The comparison could focus on the differences between programmes, or between having an AAD or not. There are also research gaps in understanding the impact of the death of AADs, and also on the potential for AADs to facilitate children with ASD to become verbal.

5 | CONCLUSION

Families with a dog from an AAD programme experience an expanded world for the child, as well as the whole family. The families experienced freedom in the places they could go, and decreased isolation due to the safety which the dog provides. The expansion of the families' worlds and freedom led to an overall increase in the quality of life of the family. This exploratory study gives richness, as well as qualitative representation to the experiences of families with AADs and their mobility within the community within the Australian context. The study also pioneered the use of occupational mapping to explore the impact of AADs upon isolation and mobility for children with autism. Occupational mapping illustrated increased mobility and decreased isolation which impacted upon many areas of the families' lives. The paradox of freedom through restraint is another new and key finding in this area which could be explored further. Future longitudinal, comparative research is needed to further explore the long-term impact AADs have upon the family and child.

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CONFLICT OF INTEREST

The authors do not have any conflicts of interest to declare.

AUTHOR CONTRIBUTIONS

The study was conceptualised by RA, MS, LW and SW. RA conducted recruitment and data collection. RA, MS, LW and SW undertook the qualitative data analysis. RA and LW undertook the quantitative analysis. RA developed the first draft of the manuscript with all authors providing critical input to develop the manuscript for submission. All authors approved the final manuscript.

DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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