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The long-term benefits of dog ownership in families with children with autism

Sophie S. Hall*, Hannah F. Wright, Annette Hames, PAWS Team[1], Daniel S. Mills

School of Life Sciences, University of Lincoln, Lincoln, United Kingdom

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ABSTRACT

There is growing interest in animal-assisted therapy in the treatment of autism spectrum disorders. Despite the potential promise for pet dog ownership to improve the lives of those affected by autism, there is limited research in this area. This study is the first to explore the long-term effects of acquiring a pet dog. Using standardized self-report measures, families who had acquired a pet dog (intervention group; n = 22) showed significantly improved family functioning in comparison to control group families (n = 15, with no dog). Both groups showed reductions in domains of parenting stress. These reductions were more evident in the intervention group; 20% of parents moved from clinically high to normal stress levels. In the domain of parent-child dysfunctional interactions, reductions were only observed in the intervention group. A significant positive relationship was observed between parenting stress of the child's main carer and their attachment to the dog.

Introduction

Neurodevelopmental impairments, including autism, form the largest group of disabled children in the UK and USA (Blackburn et al. 2012; Perou et al., 2013). Autism spectrum disorder (ASD) is a heterogeneous condition defined by the DSM-5 as a person experiencing persistent difficulties in verbal and nonverbal interactions, which result in functional limitations (e.g., in a social and educational context). These problems must have been evident in early childhood, cause significant impairment in functioning, and not be explainable by intellectual disorders or developmental delays (DSM-IV, APA 2013). Parents to children with ASD often have reduced quality of life, with high anxiety and stress-related problems (Dunn et al., 2001), in comparison to other parents (Lach et al., 2009). There is growing recognition that caregiver and family-based factors influence the effectiveness of ASD treatments (Fisman et al., 2000; Tunali & Power, 2002). Research suggests that supporting the child's main carer directly benefits the child, improving behavior management (e.g., Brereton & Tonge 2005; Tonge et al., 2006; Green et al. 2010) and sibling adjustment (Quintero, 2010), suggesting that the development of effective interventions that support the wider family unit may also bring direct benefits to the child with ASD.

There is growing scientific and clinical interest in the value of placing trained autism assistance dogs in the homes of children with ASD. Studies have shown that autism assistance dogs increase child safety, outdoor access, and enhance communication and social interaction with other people (Burrows et al., 2008; Redefer & Goodman, 1989). Parental reports suggest that the presence of an assistance dog in the home results in reduced child anxiety, and this is supported by studies showing decreased cortisol awakening response in children with autism following placement of the dog, which increase again following removal of the animal (Viau et al., 2010). It is possible that the calming effect of the dog on the child and the ability for the family to engage in activities outside the home also benefits wider family members, including the child's main carer. Furthermore, as the dog is likely to be primarily cared for by the child's main caregiver, the presence of the dog may bring direct benefits to the caregiver, in terms of a therapeutic stress-reducing effect (e.g., Allen et al., 1991, 2001) and by providing the opportunity to get outside of the home environment by taking the dog for a walk, which may increase the opportunity for social

* Address for reprint requests and correspondence: Sophie S. Hall, Joseph Banks Laboratories, School of Life Sciences, University of Lincoln, Lincoln, Lincolnshire, LN6 7DL, United Kingdom. Tel: 0781739077.
E-mail address: shall@lincoln.ac.uk (S.S. Hall).
[1] Dogs for Good, Banbury, Oxford (peter.gorbing@dogsforthedisabled.org).

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interactions (McNicholas & Collis, 2000). If such mechanisms improve quality of life for the carer, then this may have a consequently positive effect on the child's ASD behaviors.

The hypothesis that the presence of a dog in the family may bring wider benefits to the family members, such as reduced stress through mechanisms such as improved family behaviors, increased "me time," greater social interactions when engaging in dog walking, and reduced stress through the therapeutic contact with dog, may all be achieved from a pet dog as opposed to a trained assistance dog. Only recently have studies begun to look at how pets, without any specific training, may offer similar benefits to children with ASD and their families. These studies report increase improved prosocial behaviors (Byström & Lundqvist Persson, 2015; Grandgeorge et al., 2012), a reduction in restrictive behavior patterns (Byström & Lundqvist Persson, 2015), and improved child interactions and bonding experiences (Carlisle, 2014) with the addition of a pet (not necessarily a dog). Only one known study has reported the effects of acquiring a pet dog to the main carer to a child with ASD. Wright et al. (2015a, 2015b) measured family functioning and parenting stress in families with a child with autism during the first year of dog ownership (intervention group; n = 42) in comparison to families who did not acquire a pet dog during this time (control group; n = 28). Significant improvements in family functioning (reduced family weaknesses, increased strengths) were identified in the intervention group (n = 42; dog owners) compared to the control group (n = 28; nondog owners). The intervention group also showed significant improvements in the parenting stress (total stress, parental distress, and difficult child domains) in comparison to the control group (Wright et al., 2015b). These findings are compatible with evidence that suggests that pets can provide a pivotal role in family functioning (Cain, 1983; Walsh, 2009) and that pets can help reduce depressive moods (Krause-Parello, 2012), stress (Allen et al., 1991), and offer comfort in times of need (McConnell et al., 2011).

These investigations suggest that acquiring a pet dog can bring a range of benefits to families affected by ASD during the first year of dog ownership, but the durability of the benefits reported remain unknown. Given that acquiring a dog is a life-long commitment, it is essential that realistic expectations are set for any potential long-term benefits. Therefore, the aim of this study was to evaluate the longer term effects of dog ownership in the families who were studied by Wright et al. (2015a, 2015b), approximately 2.5 years after initially acquiring a pet dog, using the same outcome measures used in the original studies. When considering the long-term effects of dog ownership, it is also useful to consider the attachment bond that has formed between the dog and the main parent carer over time, since this might affect the value derived from the relationship. Therefore, a secondary aim of the study was to explore relationships between family functioning and parenting stress and pet attachment.

Method

Participants

Participants were recruited for the original studies on a voluntary basis via Dogs for the Disabled's PAWS (Parents Autism Workshops and Support) network (Dog for the Disabled 2013; since renamed Dogs for Good) and advertisements through the National Autistic Society (see Wright et al., 2015a, 2015b for further details). Participants were asked to take part in the study if their child had a confirmed diagnosis of autism spectrum disorder and was aged between 3-16 years. Because of the heterogeneous nature of ASD, we did not have exclusion criteria relating to the condition for participation, which allowed us to obtain a sample that reflected the disparity of characteristics of families in the general population. All children had received a clinical diagnosis through Children and Adolescent Mental Health Services, and this diagnostic process was confirmed by the parents. These families/parents had received no specialized service dog training for children with ASD.

Contact was made with parents, who had completed the scales at the last data collection point, and whom we knew had not requested to be withdrawn from any future studies. There were 42 sets of parents in the intervention group and 24 in the control group. In the intervention group, 22 (52.4%) of these families chose to participate in the long-term follow up; 7 families were not contactable via phone or e-mail; 13 withdrew from the study (reasons: 1 rehomed dog, 2 family stressors; 10 chose not to be involved/did not provide an explanation). The average age of the dog originally acquired by these families was 3.35 months (mean) ± 4.65 (standard deviation) (range: 2-24 months); 13 of the dogs were female and 9 were male; 15 were purebreds (2 cocker spaniels, 2 Cavalier King Charles spaniels, 2 retrievers, 2 miniature schnauzers, 2 Labradors, 1 Jack Russell terrier, 1 West Highland white terrier, 1 fox terrier, 1 Border collie, 1 Bernese mountain dog), and 7 were cross-breeds (3 spaniels × poodles, 3 Labradors × poodles, 1 Labrador × whippet). In the control group 15 (53.6%) families participated; 9 families withdrew (reasons: 3 obtained a dog, 2 were not contactable, 4 chose not to be involved). Across the intervention and control group, data were collected from 37 families.

Family functioning (Brief FAM-III-General Scale)

Of the 37 participants who responded to the FAM-III-General Scale (FAM-III GS), one participant in the control group declined to answer some of the questions. The remaining data set comprised 36 participants, 22 in the intervention group and 14 in the control group (see Table 1). The time elapsed since baseline measures were taken (preintervention; up to 17 weeks before acquiring a dog for the intervention group and matched time points for the control group) was 2.61 years ± 0.05 (mean ± standard error mean), since postintervention measures were taken was 2.37 years ± 0.06, and 1.91 years ± 0.05 since follow-up measures were recorded.

Parenting stress (Parenting Stress Index-Short Form)

Of the 37 participants who completed the Parenting Stress Index–Short Form (PSI-SF), 3 participants (2 = intervention; 1 = control) were removed from analysis for low scores (10 or below) on the defensive responding scale, indicating that their responses may be biased to present a favorable impression, in accordance with the PSI manual (Abidin, 1995). The time elapsed since baseline measures were taken (preintervention) was 2.71 years ± 0.07 (mean ± standard error mean), since postintervention measures were taken was 2.51 years ± 0.07, and 2.00 years ± 0.07 since follow-up measures were recorded. Demographics for the sample retained in the analysis are provided in Table 1.

Apparatus and materials

With the aim of being able to make direct comparisons with original studies conducted by Wright et al. (2015a, 2015b), we replicated the tests used in these studies.

Family functioning

To measure family functioning, we used the Brief FAM-III, General Scale (Skinner et al., 1995). We used the General Scale (14 items), which is designed to measure basic family functioning, is suitable for use when measuring family functioning over time (Skinner et al., 1995) and is effective at discriminating between problem and nonproblem families (see Skinner et al., 1983).