

'More people talk to you when you have a dog' – dogs as catalysts for social inclusion of people with intellectual disabilities

E. Bould,¹  C. Bigby,¹  P. C. Bennett²  & T. J. Howell²

¹ *Living with Disability Research Centre, La Trobe University, Melbourne, Australia*

² *Department of Psychology and Counselling, School of Psychology and Public Health, College of Science, Health and Engineering, La Trobe University, Melbourne, Australia*

Abstract

Background Research has shown Australian group homes, and supported living options, fail to support people with intellectual disabilities (IDs) to develop social connections. This pilot study evaluates the effectiveness of a visiting dog walking program to facilitate encounters with other community members.

Method Sixteen adults with IDs were assigned to one of two groups, matched on key characteristics. Group 1 had 14, 1-hour outings in the community with a dog and their handler; Group 2 had 14 outings with a handler alone, followed by an additional five outings with a handler and a dog. Within and between group differences were analysed according to number of encounters when a dog was present and absent. Qualitative data provided insights into the nature of these encounters.

Results The number of encounters was significantly higher when a dog was present than when participants went out into the community with a handler alone. This pattern was reflected in the qualitative data, which also suggested the presence of a dog helped to break social norms about speaking to

strangers and discourage disrespect towards people with IDs.

Conclusions A dog walking program has the potential to encourage convivial encounters, which in the long term could be catalysts to help people with IDs build social connections in their communities; this should be further explored.

Keywords community participation, dog walking, encounter, group homes, intellectual disabilities, social inclusion, supported living

Introduction

In the State of Victoria, Australia, an estimated 5000 people with intellectual disabilities (IDs) live in approximately 900 shared supported accommodation services with 24-h staff support. Many other people with IDs live in supported living options with 'drop in' support tailored to their needs. Research has demonstrated that people living in these types of supported accommodation services have relatively poor outcomes on the quality of life domains of social inclusion and interpersonal relationships (see for example, Clement and Bigby 2010; Bigby *et al.* 2012; Bigby *et al.* 2016). Many have few relationships with people other than paid staff, co-residents and family (Forrester-Jones *et al.* 2006; Clement and Bigby

Correspondence: Dr Emma Bould, Living with Disability Research Centre, La Trobe University, Melbourne, Australia +61 (0)3 9479 1556 (e-mail: e.bould@latrobe.edu.au).

2009; Verdonshot *et al.* 2009; Bigby *et al.* 2016); some feel lonely and experience negative community attitudes (Bigby *et al.* 2016).

Social inclusion has often been assessed using the binary of community presence, understood as the use of places or facilities available to everyone, and the more highly valued concept community participation, understood as a network of relationships between people with and without an ID (O'Brien and Lyle 1987; Clement and Bigby 2009). However, researchers are beginning to use the concept of encounter, originating from urban geography (Fincher and Iveson 2008), to challenge this binary, suggesting that community presence encompasses different types of interactions between strangers, some of which help to break down social exclusion or act as building blocks for friendship (Bigby and Wiesel 2011; Wiesel *et al.* 2013; Bredewold *et al.* 2016). Simplican *et al.* (2015, p.25) have argued that encounter 'offers a way to modernize the concept of community participation, as many day-to-day interactions fall under the category of encounter'.

Wiesel *et al.* (2013) identified six types of encounters experienced by people with IDs in community places: 'moments of conviviality' (involving shared activity or common purpose); 'fleeting exchanges' (simple acknowledgement by others); 'service transactions' (interactions around exchange of goods or services); 'encounters in a distinct social space' (interactions in segregated activities); 'exclusionary encounters' (disrespectful interactions that negatively reinforce difference); and 'unfulfilled encounters' (unrealised potential for interaction). These different types of encounter are not exclusive, for example, encounters in a distinct social space may be convivial. The timing and frequency of encounters can vary from being short lived, the only time two people interact, to occurring intermittently or episodically over longer periods. More frequent or regular encounters mean there is a greater likelihood that people will become recognised or get to know each other by name (Wiesel and Bigby 2016). Some research suggests the potential for encounters and their nature are influenced by environmental and social factors such as type of place, design, ambience, type of activities, regularity of attendance and the quality of individual support available to the person with ID (Amado *et al.* 2013;

Wiesel *et al.* 2013; Bigby and Wiesel 2015; Wiesel and Bigby 2016). For example, Wiesel and Bigby (2016, p. 8) used the term 'inclusionary places' as ones that people with IDs could 'access, participate in activities and were made to feel welcome'. There is however very scant evidence about the necessary conditions or strategies to facilitate encounters between people with IDs and other community members.

Research among non-disabled people has shown companion animals can act as catalysts for encounters (McNicholas and Collis 2000; Wood *et al.* 2005; Wood *et al.* 2015). For example, in an Australian survey, 58% of pet owners indicated they had got to know people and made friends through having pets (McHarg *et al.* 1995). While some research has considered the therapeutic role of pets or companion animals for people with IDs, none has explored the role of animals in facilitating encounters (Allen and Blascovich 1996; Miller and Ingram 2000; Podberscek *et al.* 2001; Becker 2002). One of the reasons for this is likely to be the rate of pet ownership by people with IDs which anecdotally is low due to costs, difficulties posed by shared households and extra burden on staff. However, several studies have shown the benefits of service dogs to the social participation of adults and children with physical disabilities, which include, facilitating social interactions with passers-by (Hart *et al.* 1987; Mader *et al.* 1989; Fairman and Huebner 2000; Shyne *et al.* 2012); reducing the negative effects of social ostracism (Eddy *et al.* 1988; Mader *et al.* 1989; Shyne *et al.* 2012); and, helping individuals who use wheelchairs to feel more secure and confident in public (Hart *et al.* 1987). These studies suggest the potential role for dogs in facilitating encounters for people with IDs.

Difficulties associated with pet ownership, however, point to the need to consider other avenues of enabling people with IDs to have regular contact with a dog as a pet rather than an assistance animal or therapeutic aid. In order to investigate the potential for dogs to act as catalysts for social inclusion of people with IDs, we trialled a visiting dog walking program in collaboration with two qualified and experienced dog handlers from a national not-for-profit organisation. The research question was, are there differences in the nature and number of encounters between people with IDs and community members when a dog is present compared with not present? In undertaking this research, we aimed to explore further the concept of encounter and

build on the limited evidence about ways of facilitating social inclusion. This is very timely given the reformed market for disability services in the UK and envisaged by the National Disability Insurance Scheme in Australia which are likely to reduce reliance on day centres and seek more individualised interventions to support social inclusion (Whitaker and McIntosh 2000).

Method

Design

The study used a matched pairs design with a partial crossover element. Participants in Group 1 ($n = 8$) had 14, 1-h outings with a handler and dog, whilst participants in Group 2 ($n = 8$) had 14 outings with the handler but without a dog. Participants in Group 2 had an additional five outings, where they crossed over to going out into the community with a dog. In view of the exploratory nature of the study, the design incorporated collection of qualitative data recorded by the handlers at the end of each outing.

Recruitment and description of participants

A sample of 16 participants living in shared supported accommodation or supported living options in a regional city in Victoria, Australia, were recruited through invitations and advertisements circulated to disability providers, and articles published in local newspapers. The criteria for inclusion were that people were 18 years or older; had an ID; and lived in shared supported accommodation or a supported living arrangement. The inclusion criterion for supported living was based on Kinsella's (1993) conceptualisation, where housing and support are separated and people live alone, or with no more than two people who are not parents or siblings.

Measures

Participant needs and characteristics

A questionnaire to measure participant needs and characteristics was designed to be completed by a key support worker, or a person who knew the participant well. It drew on the 'People we support questionnaire' (Mansell *et al.* 2013), which includes Part 1 of the Adaptive Behaviour Scale (ABS) (Hatton *et al.* 2001),

the Quality of Social Impairment question from the Schedule of Handicaps Behaviours and Skill (Wing and Gould 1978) and the Aberrant behaviour Checklist (ABC) (Aman *et al.* 1995). The reliability and validity of these measures have been studied and reported as acceptable by their authors. The questionnaire also included questions on gender, date of birth and other disabilities [e.g. physical disability, presence of autism spectrum disorder (ASD)].

Online survey – Observational measure of encounters

An online survey was designed to record the number of encounters between the participant and community members on each outing, and included two open-ended questions. First, describe what happened in the encounters, and second who was involved in it?

Procedure

The Human Research and Animal Ethics Committees of La Trobe University approved the study, and written consent was gained by either the participant or, for participants without capacity to provide informed consent, from their next of kin. Participants were informed the study involved regular 1-h outings into the local community, with a person from a partner agency, and that this person might bring a dog along.

The questionnaire was sent to each participant's key support worker with a request to complete it and return to the research team in a pre-paid envelope. These data were used to group participants into pairs, matched as closely as possible on level of disability (score on the ABS), presence of ASD and presence of social impairment. One member of each pair was then randomly allocated to one of the two groups.

Dog walking program

The dog walking program provided individual support to adults with IDs to regularly go out into their local community with or without a dog. The dogs and handlers were from a national organisation based in a regional city in Victoria. The handlers were briefed about the purpose of the study and given a day of training by a member of the research team which included, working with people with IDs, types of

communication, ‘what to do if’ scenarios and strategies for ensuring their behaviour assisted rather than prevented encounters.

A handler visited each participant and their key support worker to discuss ideas for activities and then set up a program tailored to the individual. Activities included visiting cafes, shops, walks in local parks or the local community. Participants generally chose to do the same activity on each outing, but sometimes chose a different location (e.g. went to a different café) or multiple activities (e.g. went to the shops, followed by a café). Following each outing, the handler completed the online survey.

The program ran for an extended period from October 2016 to September 2017. This was due to participants’ availability; while some had weekly outings, others had fortnightly. For some, health issues or holidays led to an extended break between one outing and the next.

Analyses

Data were entered into SPSS and analysed using both descriptive and inferential statistics. Differences in the average number of encounters for outings 1–14 for participants in Group 1 (with a dog; D) compared with Group 2 (without a dog; ND) were explored using Mann–Whitney *U*. Within group comparisons for Group 2 across outings 1–14 (ND) compared with outings 15–19 (D) were explored using Wilcoxon signed-rank tests. As the study was primarily exploratory, Bonferroni adjustments were not used in order to reduce the risk of Type I errors, and $P < .05$ was reported for significance. Effect sizes were calculated using the methodology of Fritz *et al.* (2012), by converting z into r using the formula $r = \frac{\text{absolute value of } z}{\sqrt{N - \text{Ties}}}$. Cohen (1988) suggests that r values greater than 0.5 are considered large, greater than 0.3 medium and greater than 0.1 small.

A content analysis of the qualitative data recorded by the handlers was undertaken, with attention given to the different types of encounters that had been described, what had triggered each one and differences between those that occurred with and without the dog. To ensure validity, the first and second authors performed the analysis separately, then discussed their results and obtained consensus (Creswell 2012).

Results

Participant characteristics

There were five males ($n = 2$ in Group 1; $n = 3$ in Group 2) and 11 females, aged 21–64 (mean = 45). Of these, four ($n = 2$ in Group 1; $n = 3$ in Group 2) had high support needs (i.e. a score of less than 151 on the short form of the SABS Part 1 (Hatton *et al.* 2001), and one participant (in Group 2) was non-verbal. Table 1 shows that participants in Group 1 and Group 2 were closely matched on level of disability, presence of ASD and presence of social impairment. There were also no significant differences on age, gender, physical disability and presence of challenging behaviour (score on the ABC). The majority ($n = 6$ in Group 1; $n = 5$ in Group 2) lived in shared supported accommodation.

Encounters

Figure 1 shows the average (and standard deviations) number of encounters for participants in Group 1 and Group 2 for each outing. On average, across outings 1–14, participants in Group 1 (D) had 2.6 (range 1.1–4.7) encounters, which is significantly higher (Mann–Whitney $z = -2.575$, $P = .010$) than the 1.2 (range 0–2.9) encounters for Group 2 (ND). The effect size for this difference was large (.85).

Within group comparisons for Group 2 found that, compared with outings 1–14 (ND), the average number of encounters increased significantly ($Z = -2.197$, $P = .028$) to 3.4 (range 1.2–4.8) for outings 15–19 (D). This effect size was large (.78).

Table 1 Characteristics of the participants in Group 1 and Group 2.

| | | Group 1 | Group 2 | P |
|--------------------------|------------------|---------|---------|-------------|
| Age (years) | <i>n</i> | 8 | 8 | |
| | M | 47 | 43 | $P = .462$ |
| | Range | 21–64 | 32–56 | |
| Male | <i>n</i> | 2 | 3 | $P = .590$ |
| | Part 1 ABS score | M | 178 | 171 |
| | Range | 130–234 | 81–241 | |
| Total score on the ABC | M | 21 | 24 | $P = .793$ |
| | Range | 2–42 | 3–62 | |
| Socially impaired | <i>n</i> | 2 | 3 | $P = .590$ |
| Autism spectrum disorder | <i>n</i> | 1 | 1 | $P = 1.000$ |
| Physical impairment | <i>n</i> | 4 | 3 | $P = .614$ |

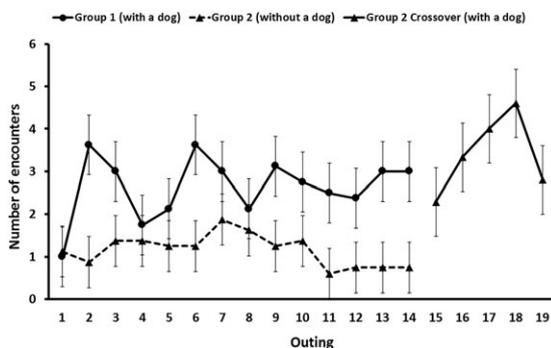


Figure 1 Average (and standard deviations) number of encounters each outing for participants in Group 1 (with a dog) and Group 2 (without a dog; with a dog).

Qualitative results

The quantitative data showed significantly more encounters between participants and strangers when a dog was present. The qualitative data suggested some differences in the nature of encounters experienced between groups. These differences were also evident when Group 2 crossed over to going out with a dog. The qualitative data also provided insights into reasons for these differences and the way that being out with a dog facilitates convivial encounters. To ensure confidentiality, all names have been changed, and salient quotes have been identified by participant number (P1–16), whether a dog was present (D) or absent (ND), and outing number (O1–O19).

Presence of a dog helps avoid unfulfilled or exclusionary encounters

Reflections of the handlers suggested that a different and more positive pattern of encounters occurred for Group 1 (D) compared with Group 2 (ND). As the quote below illustrates, they perceived that without a dog participants were more likely to be ignored by members of the public and only have transactional type interactions:

I am noticing an interesting pattern in the outings where there is no dog present. Only shop attendants initiate conversation. Some say hello to me, but they try not to look at the person with the disability (P8, ND, O8).

Five instances of being treated disrespectfully by members of the public were recorded for Group 2, such as the situation experienced by Lyle in the

excerpt below. No situations of this nature were recorded for Group 1:

Three high school kids were making fun of Lyle as we were having a drink. They were laughing and giggling, and when Lyle looked over, they covered their mouths. It was clear they were making Lyle the subject of their jokes. (P5, ND, O4).

Presence of a dog helps in being acknowledged and recognised

Over time, as they became regular visitors to the same venues, participants in both groups began to be recognised by staff and other patrons. The data suggested this process occurred more quickly for participants in Group 1 (D) compared with those in Group 2 (ND). As these excerpts illustrate, it took until outing 13 for Mark in Group 2 to be recognised, compared with this occurring by outing 4 for Frankie in Group 1:

We have been coming to the same café each week, and we now have a waitress that remembers our orders and how Mark likes things. (P15, ND, O13).

When Frankie walked into the café today, he was greeted directly by the staff, by name, with ‘Hello Frankie’. The other shop attendant commented to him that [the dog] was Seraphim, wasn’t it? (He had remembered from the week before). (P3, D, O4).

A neighbour of one participant in Group 1 began to acknowledge her for the first time when she went out with the dog:

At the start of the program Michelle had spoken about not liking any of her neighbours because they never talk to her. She had said ‘they just ignore me’. However, today one smiled and said hello to Michelle, and Michelle smiled and said hello back. (P1, D, O3).

Presence of a dog helps initiate convivial and fleeting encounters

Differences in the types of encounters experienced were most clearly illustrated when participants in Group 2 crossed over to going out with a dog. As the excerpts below show, when Lauren went out without

a dog she had no interactions with the other customers in the café. Two outings later, when she visited the same café with a dog, she interacted with several customers who approached her and initiated a brief convivial encounter by asking to pat her dog:

For Lauren, no one talks to her, and she talks to no one other than the staff at the cafe where we get afternoon tea. No one thinks to say hello to two people having coffee. Nor does Lauren seek interaction with anyone other than me - unless there is a purpose to it, i.e. a transaction of some kind. (P14, ND, O13).

People came up to Lauren and myself today and asked if they could pat the dog. Lauren said to me 'People are friendlier when you have a dog, I have seen people look and smile'. (P14, D, O15).

The data illustrated the various ways that the dog acted as a catalyst for encounters with strangers in public open spaces or in cafés. Dogs appeared to attract attention and invoke social rituals, whereby strangers ask dog owners if they can pat the dog, or feel it is appropriate to make positive comments or ask questions about the dog. For example:

Rachael spoke to seven people whilst out shopping and in the café, one of whom was the waitress who took her order, but people came up and asked if they could pat her dog. (P9, D, O15).

We were walking and a man yelled out 'I love your dog' and Claire thanked him with the biggest smile on her face. (P7, D, O1).

As well as fleeting encounters of this nature, the dog created a point of common interest or shared identity between the participant and strangers, which sometimes acted as a springboard for longer conversations and more convivial encounters:

The couple next to us asked Claire some questions about her dog ... The manager of the café told Claire she thought Murphy was lovely and then had a conversation with Claire about dogs. (P7, D, O3).

Going out with a dog also appeared to give some participants greater confidence to engage in social exchanges initiated by strangers:

Frankie said a big, 'HELLO' to a patron walking past, and it seemed that he is having more encounters each week. He is progressively getting more confident in interacting with others. (P3, D, O4).

Discussion

The dog walking program offered regular, relatively short outings into each participant's local community, and these results demonstrate the potential for dogs to be catalysts for social inclusion of people with IDs. When participants went out with a dog, they had significantly more encounters of a different and more convivial nature compared with going out without a dog. The presence of a dog appeared to offer protection against negative factors, and to facilitate fleeting and convivial encounters, as well as giving participants greater confidence to engage in social exchanges, and be more quickly recognised in community places. The findings also suggest that the presence of a dog in a community space such as a café, shopping centre or even a street helps to foster inclusivity by breaking down social norms about not speaking to strangers and replacing them with ones that foster acknowledgement and make places more welcoming to people with IDs. This warrants further investigation.

These findings support research with non-disabled individuals (see for example McNicholas and Collis 2000; Wood *et al.* 2015) and individuals with physical disabilities (see for example Fairman and Huebner 2000; Shyne *et al.* 2012), which found the dog acted as a social stimulant, with members of the community often initiating contact to ask questions about the dog. Furthermore, there was some evidence to support previous research that a dog helped to reduce the negative effects of social ostracism (see for example Shyne *et al.* 2012) and increased individual's confidence (Hart *et al.* 1987).

A limitation of the study was the method of data collection, which was undertaken by handlers who were not blind to the experimental conditions. A further limitation is the absence of the direct voices of

the participants in the study. Some participants had severe IDs and their thoughts, feelings and other inner mental states could not be directly accessed. Reliance was therefore placed on handlers' inferences of participants' behaviours and descriptions of their responses to people in their local community (Kellett and Nind 2001). Although appropriate for a pilot study, for the next stage of this research program to be sufficiently rigorous, more objective measures will be required. Further, given the exploratory nature of the study, we recorded only the total number of encounters and not the number of different types. Analysis of the open-ended qualitative data collected from the handlers reflected to some extent the different types of encounters identified by Wiesel *et al.* (2013), suggesting the potential of this typology as the foundation for developing a tool to collect data about type as well as number of encounters. However, the non-exclusive nature of encounter types means the original typology would require refinement before it can be incorporated into a measurement tool. Additionally, tool development would have to take account of the later research by Wiesel and Bigby (2016), not reflected in the original typology, about the effects of repeated encounters on inclusivity and being known.

Other limitations of the study are its small sample size and coverage of only a regional city in one Australian state. The geographical coverage was limited due to the location of the handlers and dogs, and despite wide circulation of advertisements to disability providers and articles in local newspapers, the study was limited by the number of people who expressed interest in participating. This may have been due to time constraints of disability support workers to discuss and support people to be involved in research, but also due to some resistance from organisations. For example, a CEO from one organisation argued the outcome of the study conflicted with the areas of support (i.e. social inclusion and connections) they were trying to expand.

The size of the data set limits the power in the statistical analysis. However, the inclusion of a partial crossover element for participants in Group 2 enabled each participant to act as his or her own control, removing participant variation. This strengthens the finding that the differences between and within groups in terms of the number and nature of encounters were due to the presence of the dog. Although crossover designs are usually in both directions, ethically we did not feel comfortable taking a dog away from

participants in Group 1. To confirm the findings, further research is required with a larger sample living in metro and regional areas across Australia.

Our study highlights the potential for a dog walking program to facilitate convivial encounters, which as well as being important in their own right to an individual's social inclusion may in the longer term lead to stronger social connections and friendships for people with IDs. This pilot study adds to the very limited evidence about effective strategies to support social inclusion and creates the basis for further research both about dog walking programs and refinement of the typology and measurement of encounter. The current Australian context, where major reform of the disability service system is being rolled out, is particularly conducive to further exploration of this type of program. The National Disability Insurance Scheme represents a significant investment in furthering social inclusion and a heightened public awareness of the exclusion of people with disabilities. It is creating opportunities for creativity and innovation as well as the mechanisms for funding more flexible and individualised interventions such as the dog walking program trialled in this study.

Acknowledgments

Thanks are extended to research assistant Jennifer Gravrok, and to Joanne Baker, Jenn Atkins and the dogs from the national not-for-profit organisation. Funding support was from a La Trobe University Building Healthy Communities RFA Grant. Parts of this paper have been presented at the 2017 Annual Conference of the Australasian Association for Intellectual Disabilities, Hobart, Australia and the 5th Europe Congress, International Association for the Scientific Study of Intellectual & Developmental Disabilities. Athens, Greece.

Conflict of Interest

The authors report no declarations of interest.

References

- Allen K. & Blascovich J. (1996) The value of service dogs for people with severe ambulatory disabilities. A randomized controlled trial. *Journal of the American Medical Association* 275, 1001–6.

- Amado A., Novak Stancliffe R. J., McCarren M. & McCallion P. (2013) Social inclusion and community participation of individuals with intellectual/developmental disabilities. *Intellectual and Developmental Disabilities* **51**, 360–75.
- Aman M. G., Burrow W. H. & Wolford P. L. (1995) The Aberrant Behavior Checklist–Community: factor validity and effect of subject variables for adults in group homes. *American Journal on Mental Retardation* **100**, 283–92.
- Becker M. (2002) *The Healing Power of Pets: Harnessing the Amazing Ability of Pets to Make and Keep People Happy and Healthy*. Hyperion, New York.
- Bigby C., Bould E. & Beadle-Brown J. (2016) Conundrums of supported living: the experiences of people with intellectual disabilities. *Journal of Intellectual and Developmental Disability Research* **42**, 309–19. <https://doi.org/10.3109/13668250.2016.1253051>.
- Bigby C., Cooper B. & Reid K. (2012) *Making Life Good in the Community: Measures of Resident Outcomes and Staff Perceptions of the Move from an Institution*. Department of Human Services, Melbourne <http://arrow.latrobe.edu.au:8080/vital/access/manager/Repository/latrobe:34103>.
- Bigby C. & Wiesel I. (2011) Encounter as a dimension of social inclusion for people with intellectual disabilities: beyond and between community presence and participation. *Journal of Intellectual and Developmental Disability* **36**, 263–7.
- Bigby C. & Wiesel I. (2015) Mediating community participation: practice of support workers in initiating, facilitating or disrupting encounters between people with and without intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities* **28**, 307–18.
- Bredewold F., Tonkens E. & Trappenburg M. (2016) Urban encounters limited: the importance of built-in boundaries in contacts between people with intellectual or psychiatric disabilities and their neighbours. *Urban Studies* **53**, 3371–87.
- Clement T. & Bigby C. (2009) Breaking out of a distinct social space: reflections on supporting community participation for people with severe and profound intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities* **22**, 264–75.
- Clement T. & Bigby C. (2010) *Group Homes for People with Intellectual Disabilities: Encouraging Inclusion and Participation*. Jessica Kingsley Publishers, London.
- Cohen J. (1988) *Statistical Power Analysis for the Behavioural Sciences*, 2nd edn. Lawrence Erlbaum Associates, Hillsdale, New Jersey.
- Creswell J. W. (2012) *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research*, 4th edn. Pearson Education, Limited, Boston, MA.
- Eddy J., Hart L. A. & Boltz R. P. (1988) The effects of service dogs on social acknowledgements of people in wheelchairs. *Journal of Psychology* **122**, 39–45.
- Fairman S. K. & Huebner R. A. (2000) Service dogs: a compensatory resource to improve function. *Occupational Therapy in Health Care* **13**, 41–52.
- Fincher R. & Iveson K. (2008) *Planning and Diversity in the City: Redistribution, Recognition and Encounter*. Palgrave Macmillan, Basingstoke.
- Forrester-Jones R., Carpenter J., Coolen-Schrijner P., Cambridge P., Tate A., Beecham J. *et al.* (2006) The social networks of people with intellectual disabilities living in the community 12 years after resettlement from long-stay hospitals. *Journal of Applied Research in Intellectual Disabilities* **19**, 285–95.
- Fritz C. O., Morris P. E. & Richler J. J. (2012) Effect size estimates: current use, calculations, and interpretation. *Journal of Experimental Psychology: General* **141**, 2–18.
- Hart L. A., Hart B. L. & Bergin B. (1987) Socializing effects of service dogs for people with disabilities. *Anthrozoös* **1**, 41–4.
- Hatton, C., Emerson, E., Robertson, J., Gregory, N., Kessissoglou, S., Perry, J., Felce, D., Lowe, K., Walsh, P. N., Linehan, C., & Hillery, J. (2001). The adaptive behavior scale-residential and community (part I): towards the development of a short form. *Research in Developmental Disabilities*, **22**(4), 273–88.
- Kellett M. & Nind M. (2001) Ethics in quasi-experimental research on people with severe learning disabilities; dilemmas and compromises. *British Journal of Learning Disabilities* **29**, 51–5.
- Kinsella P. (1993) *Supported Living: A New Paradigm*. National Development Team, Manchester, UK.
- Mader B., Hart L. A. & Bergin B. (1989) Social acknowledgments for children with disabilities: effects of service dogs. *Child Development* **60**, 1529–34.
- Mansell J., Beadle-Brown J. & Bigby C. (2013) Implementation of active support in Victoria, Australia: an exploratory study. *Journal of Intellectual & Developmental Disability* **38**, 48–58.
- McHarg M., Baldock C., Heady B. & Robinson A. (1995) *National People and Pets Survey*. Urban Animal Management Coalition, Sydney.
- McNicholas J. & Collis G. (2000) Dogs as catalysts for social interactions: robustness of the effect. *British Journal of Psychology* **91**, 61–70.
- Miller J. & Ingram L. (2000) Perioperative nursing and animal-assisted therapy. *Association of Operating Room Nurses Journal* **72**, 477–83.
- O'Brien J. & Lyle C. (1987) *A Framework for Accomplishment*. Responsive Systems Associates, Decatur, GA.
- Podberscek, A.L., Paul, E. S., & Serpell, J. A, editors (2001). *Companion Animals and Us*. Cambridge, UK: Cambridge University Press.
- Shyne A., Masciulli L., Faustino J. & O'Connell C. (2012) Do service dogs encourage more social interactions between individuals with physical disabilities and nondisabled individuals than pet dogs? *Journal of Applied Companion Animal Behavior* **5**, 16–24.
- Simplican S., Leader G., Kosciulek J. & Leahy M. (2015) Defining social inclusion of people with intellectual and developmental disabilities: an ecological model of social

- networks and community participation. *Research in Developmental Disabilities* **38**, 18–29.
- Verdonschot M. M., De Witte L. P., Reichrath E., Buntinx W. H. & Curfs L. M. (2009) Community participation of people with an intellectual disability: a review of empirical findings. *Journal of Intellectual Disabilities Research* **53**, 303–18.
- Whitaker A. & McIntosh B. (2000) Changing days. *British Journal of Learning Disabilities* **28**, 3–8.
- Wiesel I. & Bigby C. (2016) Mainstream, inclusionary and convivial places: locating encounter between people with and without intellectual disability. *Geographical Review* **106**, 201–14. <https://doi.org/10.1111/j.1931-0846.2015.12153.x>.
- Wiesel I., Bigby C. & Carling Jenkins R. (2013) Do you think I'm stupid?: urban encounters between people with and without intellectual disabilities. *Urban Studies* **50**, 2391–406.
- Wing L. & Gould J. (1978) Systematic recording of behaviors and skills of retarded and psychotic children. *Journal of Autism and Childhood Schizophrenia* **8**, 79–97.
- Wood L., Giles-Corti B. & Bulsara M. (2005) The pet connection: pets as a conduit for social capital? *Social Science & Medicine* **61**, 1159–73.
- Wood L., Martin K., Christian H., Nathan A., Lauritsen C., Houghtton S. *et al.* (2015) The pet factor – companion animals as a conduit for getting to know people, friendship formation and social support. *PLoS One* **10** e0122085. doi: <https://doi.org/10.1371/journal.pone.0122085>.

Accepted 19 July 2018