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“It was not just a walking experience”: reflections on the role of care in dog-walking

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Abstract

Research into physical activity and human health has recently begun to attend to dog-walking. This study extends the literature on dog-walking as a health behaviour by conceptualizing dog-walking as a caring practice. It centers on qualitative interviews with 11 Canadian dog-owners. All participants resided in urban neighbourhoods identified through previous quantitative research as conducive to dog-walking. Canine characteristics, including breed and age, were found to influence people’s physical activity. The health of the dog and its position in the life-course influenced patterns of dog-walking. Frequency, duration and spatial patterns of dog-walking all depended on relationships and people’s

capacity to tap into resources. In foregrounding networks of care, inclusive of pets and public spaces, a relational conceptualization of dog-walking as a practice of caring helps to make sense of heterogeneity in patterns of physical activity amongst dog-owners.

Keywords

Dog-walking; physical activity; dog care; human-animal relationship; relational approaches

Introduction

Upwards of 40% of people in Western countries live with a pet dog, and many more have at least weekly contact with a canine companion when visiting friends, in parks or other public spaces (McNicholas *et al.*, 2005, Toohey and Rock, 2011). Dog-owners appear to be more physically active than those without dogs, but dog ownership does not guarantee that owners will regularly walk with their dogs (Cutt *et al.*, 2008). As a socio-cultural practice, dog-walking can never be the same experience as walking unaccompanied by a dog. In fact, experimental research supports this theoretical supposition, in that interpersonal interactions were observed to differ when people were accompanied by dogs, and were also influenced by dog breed (McNicholas and Collis, 2000, Wells, 2004). At the same time, pet dogs do not mean the same thing to everyone, and different dogs form different kinds of relationships with different people. We contend that such diversity needs to be described and understood, if we are to think through the health and policy implications associated with the presence of dogs in our midst.

A relational approach to population health underpins this article (Cummins *et al.*, 2007), which conceives of places as dynamic and fluid entities that are continually produced, reproduced and altered in the context of power relations that constrain or enable both thinking and action. While both structure and agency are typically conceptualized as purely human phenomenon, relational approaches have highlighted that places and other non-human entities are absolutely integral to what people actually do and to what happens to actual people (Cummins, *et al.*, 2007). For us, the crucial insight of a relational approach to population health is that pet dogs may have various kinds and spheres of influence in Western society. Indeed, dogs can form preferences and often act on these (Haraway, 2008). Their lives are largely shaped by the same structural constraints and possibilities that present themselves to their owners (e.g., Shore *et al.*, 2003). Moreover, the relationships that dogs form with other dogs and with people other than their owners will be influenced by their owners' social networks, access to public space, and geographic mobility (Westgarth *et al.*, 2008, Wood and Giles-Corti, 2005). In short, the agency or influence exerted by pet dogs is not only a matter of their own biology, but also how they are placed or situated, that is, in relation to other animals and other people, in space, and over time.

Dogs thus tend to be public pets, to an extent that birds or cats or fish are not. We have looked closely at how actual people go about caring for dogs, and that process led to conceptualizing of dog-walking as a caring practice that usually occurs in public places. More specifically, we have focused on commonalities and differences regarding practical matters such as where dog-walking takes place, when

dog-walking takes place, who walks with which dogs, and where dogs are taken for walks. We also paid attention to socio-cultural clues about contexts in which the presence of dogs was not seen as appropriate, and places where leashing a dog was not viewed as necessary. Heeding such clues helped us to account for variations in patterns of dog-walking, thereby putting individual choices and situations into a broader context.

Methods

Sample Recruitment, Setting and Ethical Considerations

This study hinges on criterion-based intensity sampling (Patton, 1980, p. 171). Criterion-based intensity samples are purposefully composed of cases that provide for illuminating comparisons but without being highly unusual or extreme. The study focused on a North American city of approximately 1 million people with over 100,000 registered dogs [Blinded Reference]. Dog-owners who had previously completed telephone and postal surveys focused on physical activity, and who had agreed to be contacted for follow-up research projects, were contacted via telephone by [First Author] in August 2010. The original sampling frame was generated in 2007 through random-digit dialling, but only dog-owners who completed a follow-up questionnaire that included a question on dog-ownership and who were living in neighbourhoods with a grid-like street pattern were contacted for follow-up qualitative interviews because previous research within our group had found that dog-owners in residing neighbourhoods with a grid-like street pattern were most likely to walk their dogs [Blinded Reference]. Nevertheless, the amount and frequency of dog-walking reported by dog-owners residing in grid-like neighbourhoods varied considerably, and we wanted to put this variation into a richer social context than allowed by the survey and environmental data on hand. We ended recruitment efforts after 10 people agreed to be interviewed, and preliminary analysis confirmed sufficient heterogeneity for our purposes. One man elected to be interviewed together with his wife, resulting in a sample size of 11. Both the parent survey study and this follow-up qualitative study were approved by the [Blinded] Health Research Ethics Board.

Research Process

[First Author] personally conducted all the interviews in August 2010 except one, which was conducted by [Second Author] in September 2010. At the time, [Second Author] had lived continuously in the city where the interviews took place for seven years and [First Author] had lived there for six months. All but two of the interviews took place in participants' homes; one interview took place at the participant's workplace, and another interview took place in a casual restaurant suggested by the participant. The interviews were conducted entirely in English, which is the first language for both interviewers and for all participants.

The consent form identified the project's purpose as understanding human health vis-à-vis people's interest in and concerns about the health of pets. The interviews were conducted in an informal style that invited participants to report and reflect on everyday routines and unusual occurrences, to compare and contrast, and to take the conversation in directions that were meaningful

to them but consistent with the purpose of the study (Spradley, 1979). To begin, participants were asked about the dog or dogs that had been residing with the participants when they were initially recruited into the parent study. Within a minute or two, the interviewer asked a grand-tour type question, along the lines of: What is it like to care for your dog(s) in this city? Conversation during the interviews was not keyed to the owner's level of physical activity, and so quite deliberately, we did not review participants' questionnaire responses on their physical activity patterns until very late in the analysis (see below). Instead the participants were asked to describe what was involved in looking after their dog on a day-to-day basis; and how this differed over the canine life-course and between different dogs that they had owned. Not all of the dogs recorded at baseline were still alive, in which case the interviews involved discussion of what it had been like to care for the deceased dog, and the extent to which the owners' daily lives and interpersonal relationships have changed since the dog's death. Several participants, in addition, compared their current dogs with their previous dogs, or with dogs belonging to other people. The interviews were recorded digitally and later transcribed by research assistants in a naturalistic style (Poland, 1995).

Data analysis took place iteratively, and began in a participatory fashion during the interviews (Spradley, 1979). Notes taken during the interviews and immediately afterwards served as the basis for a page or two of observations and reflections for each interview (Emerson *et al.*, 1995). These memos constituted the first level of interpretation removed from the interview context (Miles and Huberman, 1994, p. 66), and transcription comprised the second level of interpretation (Hammersley, 2010, Poland, 1995). Third, both authors independently read through the corpus of fieldwork memos and transcripts, annotating them with notes (Miles and Huberman, 1994 pp. 67-68). In the fourth level of interpretation, to assist with comparisons across cases, [First Author] created a tabular matrix (Miles and Huberman, 1994 pp. 178-179) into which he entered salient information regarding household composition and the extent of involvement of different household members in dog care, people who do not live in the household but who were actively involved in dog care, the dogs themselves, the neighborhoods surrounding the residence, and other locations that the dogs visited regularly – whether with household members or not. Fifth, [Second Author] plotted the participants' addresses and shared the resulting map with [First Author], which allowed us to trace the dog-walking described by participants in space. We also viewed photographs of the corresponding streetscapes and parks using GoogleMaps®. Sixth, we met for several hours to discuss the dataset and our impressions. Seventh, [First Author] reviewed the transcripts again to identify circumstances, times and places in which specific dogs appeared to have helped their owners or other people involved in their care to be mobile, or not. These observations were illustrated with direct quotes from each interview transcript. All of this information was entered into another tabular matrix (Miles and Huberman, 1994, pp. 183). In an eighth phase of interpretation, we retrieved the participants' surveys from the parent study, and drew on their responses to assist in contextualizing the relationships that people described with their dogs as well as relationships with places or other people that people described as being influenced by their dogs.

Results

Our sample of dog owners was heterogeneous. The terms that they used to describe themselves included stay-at-home mothers, lawyers, doctors, professors, empty-nesters, small business owners, and retired, and their dogs varied in breed, age and health status (see Table 1).

Table 1: Sample Characteristics

Household	Age Group	Gender	Neighbourhood Median household Income*	Neighbourhood % without high-school diploma*	Dog Ownership Status	Inventory of spaces used for canine care mentioned in the interview
#1	60-69	1 Female	42943	13.4	1 dog Alive	<ul style="list-style-type: none"> • House & Yard • Automobile • Neighborhood streets • Neighborhood off leash area • Regional off-leash areas • Private 'Ranch'
#2	50-59	Female	61401	10.9	1 dog Alive	
#3	60-69	Female	184189	11.0	1 dog Alive	<ul style="list-style-type: none"> • House & Yard • Automobile • Friend's House • Neighborhood streets • Neighborhood off leash area • Regional off-leash areas • National Park outside city limits
#4	60-69	Male	184189	11.0	1 dog Alive	<ul style="list-style-type: none"> • Home • Neighborhood streets and sidewalks • Adult children's homes • Neighborhood park located on pathway system • Regional off-leash area • Private 'Cabin'
#5	70-79	Male	184189	11.0	1 dog Deceased	<ul style="list-style-type: none"> • House • Parents' home • Neighborhood streets and sidewalks • "the country"
#6	50-59	Female	133288	8.3	3 dogs Alive	
#7	50-59	Female	50394	11.2	1 dog Alive	<ul style="list-style-type: none"> • House & Yard • Automobile • Neighborhood streets and sidewalks • Neighborhood off-leash area • National park • Private 'Farm'

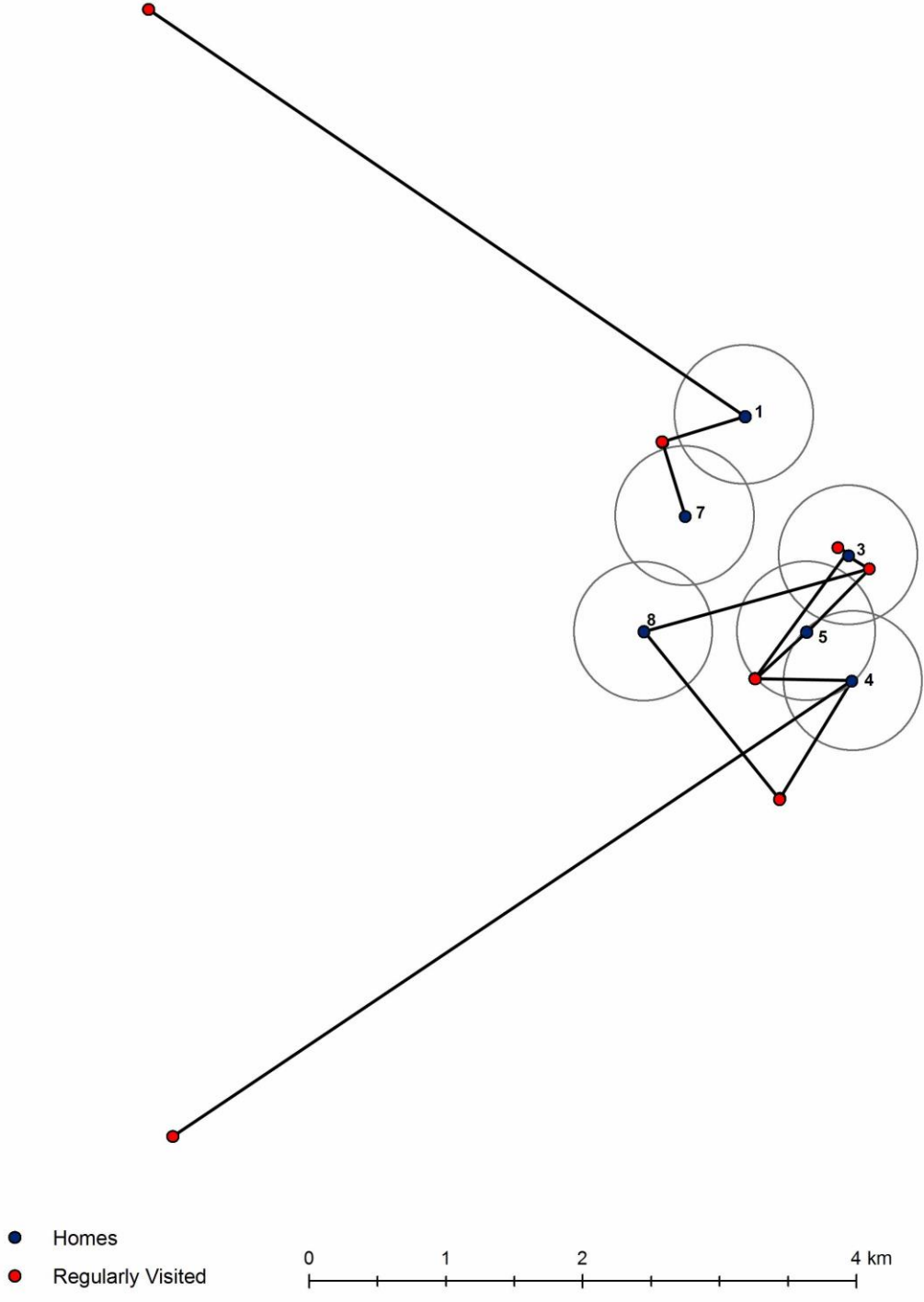
#8	70-79	Male & Female (Couple)	65391	11.1	1 dog Deceased	<ul style="list-style-type: none"> • House • Neighborhood streets and sidewalks • Neighborhood parks and off-leash area • Private 'Cottage'
#9	50-59	Female	59822	15.9	1 dog Alive	
#10	30-39	Female	49039	12.8	1 dog Deceased	

All lived in households with mid- to high-incomes, and in neighbourhoods with relatively high average levels of income and education, but some of these neighbourhoods were more mixed in sociodemographic terms than others. The table lists spaces that a sub-sample of participants, who all lived near to one another, reported using routinely together with their dogs, as well as places that their dogs had frequently visited in the company of other people. We have not included grooming or veterinary services in the inventory, in light of the interest in dog-walking, but such service providers were mentioned by several participants. Dogs are allowed on city buses and trains in the city where the study took place, but none of the participants mentioned public transit as part of dog care. Automobiles, a mobile space, were included in the inventory if participants mentioned them explicitly as a resource for dog care. In this setting, a privately-owned automobile is implicit to accessing many spaces within city limits and to all spaces outside city limits that were mentioned by participants in describing care for their dogs.

Caring for a dog influences how people use space

The inventory in the final column of table 1 brings into view the various kinds of spaces that act as connecting points or nodes in networks of dog care. It is worthwhile noting that in five out of six households in the sub-sample, owners reported that their dogs had regularly travelled 100km or more outside city limits. Figure 1 displays the spaces within city limits in Table 1 for which sufficient detail was provided by participants to locate them on a map.

Figure 1: Use of Space within the City Limits by 6 Pet-Owning Households



All of the participants allowed their animals to be “off-leash” some of the time when outside the confines of their primary residence. Most of the reported off-leash activity took place in an urban park setting in a designated ‘off-leash area’, (known colloquially as an ‘off-leash park’ or ‘dog park’). Some dogs were allowed off-leash at a private ranch, farm or natural park outside city limits, and some owners also reported allowing their dogs to be off-leash while walking in and around their neighbourhood. Off-leash walking on neighbourhood streets and paved pathways in city parks either took place very early in the morning when these public thoroughfares were relatively quiet, or if during the day, under the close supervision of the owner. In this regard, one participant noted:

I'm a little more relaxed about [that] you know, I know I'm not supposed to have him off leash but he's right next to me. So I would-, I would make a case that he's on an invisible leash if I was ever confronted by a bylaw officer. (#9)

Despite significant differences in the location and number of venues where specific dogs were taken for companionship and exercise, we found high levels of connectivity between the participants who lived near to one another. All of the six households shown in Figure 1 were connected to at least one other household by regular use of the same off-leash area; four of them (two-thirds) were connected to each other by only two ‘steps’ or ‘degrees of separation’ (household-area-household-area-household).

Caring for a dog promotes physical activity for people

Almost all of the owners interviewed indicated that looking after their dog’s needs for exercise, socialization and toilet breaks motivated them to be physically active outdoors. Of particular interest was how important for some of our participants the presence of the dog was as a driver of physical activity.

It was not just a walking experience, it was a ... it was a total, an all-in experience. I had a half an hour to an hour every morning to-, to plan my day, and plan what I was gonna do. And so it was kind of synergistic ... The important thing with that dog is that ... the only way for us to manage it was to make sure you had a routine, and you stayed with it. Because then it would become a burden as opposed to an asset. So the dog might get out of bed and get you going in the morning, and you enjoyed it all the way through. (#5)

In addition, for most participants, care of the dog also involved their friends, neighbours and other non-resident family members on a regular basis. Often, the impetus for the non-resident to participate in a dog’s care was a unique relationship with the animal. For some of these non-resident carers, minding the dog prompted them to be more physically active than they otherwise are generally. Benefits to non-resident carers described in the interviews include friends of the family who will pick up the dog from the owner’s residence to take it along as an exercise companion, grandchildren who take the dog out to play when they visit, neighbours who assume responsibility for the animal when the owner(s) are away travelling, and friends who either stay in the owner’s home or bring the dog to their own home when the owner(s) are out of town for extended periods.

Several participants also described how their dog preferred the family 'pack' to be together, which often prompted people to go out and walk the dog as a group. For example:

If we're both home, he likes us both to come. He's a herding dog, so he very much likes to keep the pack together. (#7)

Finally, reflecting on what had changed since her dog had recently died, one participant indicated that the presence of her dog on walks had in some way provided her with a sense of security, especially if she was out late in the evening.

It was getting to be dark, and normally I never think about it 'cause I-, just you know, Shep's with me and he's-, he was always my other eyes and ears and just straying along and it suddenly hit me and I thought, "Oh, maybe I have to-, I have to pay attention now!" ... I need to be a little bit more aware because, I don't have Shep. (#10)

This participant did not say whether she was walking less in the evening than before, but was planning to adopt a dog in the foreseeable future, once she and the other family members felt ready emotionally and 'the right dog' was found. Matching considerations included a dog's ability to go for long walks and jogs, as well as tolerance and affection for children; this participant had two young children of her own and also occasionally has other children over for play-dates and parties.

Caring for a dog does not always promote physical activity for people

Reasons why caring for a dog could be a barrier to human physical activity were associated with an individual animal's preferences and capacities, the preferences, capacities and circumstances of the owner, and the social norms and animal by-laws that influence where dogs are taken. Yet the dominant theme that emerged from the interviews with owners was the effects of ageing and ill-health on their dog's exercise needs and capabilities, and thereby their own physical activity. In particular, a number of participants in the interviews reported how their elderly dog's arthritis eventually became a constraint on the distance travelled and time spent while out walking. For example:

I stopped taking her to the [Blinded Neighbourhood Park] because she couldn't manage it... she didn't do that for the last three years anyways. Maybe four... She couldn't do it. I mean, and then. I found, well there was a couple of times I carried her home. (#8)

As well as canine injuries, disease and age-related changes in their dog's exercise capacities, some owners reported that behavioral conditions precluded them from exercising their animal. Others found that their dog's attraction to garbage or compulsive drinking made them change walking behaviors and localities. A number of owners worried about their dog's state of mind if it was left at home on its own for too long. One female owner who provided most of the care noted:

I think it's much easier to get personal exercise without the dog than with it. You know, because otherwise, well you know-. She doesn't like it when you go away. Right? ... I

mean, you do it, but maybe you won't do it quite as often especially if it's going to make it a really long day away. (#8)

In another example of consideration for a dog's mental health impacting negatively on human physical activity, one owner regularly employed a professional dog walker in the hope that time out with someone other than a member of the family would help them manage their dog's separation anxiety.

It was also clear that an owner's ability to manage and control their dogs was an issue for some households. One owner regularly employed a professional dog walker because:

It's very hard to walk three hunting dogs at the same time. So that's why they get runs, as opposed to regular walks... They're really nice dogs, and they're not stupid ... William is a strong dog; he alone is a handful. (#6)

Other people's dogs presented similar challenges, as poorly controlled dogs restricted the types of activities owners participated in with their own animals. For example, one owner noted:

I'm very, very wary of Pitbulls if they're ever off a leash. I will keep him [her dog] behind me and ask them if their dog is friendly before the dog even gets close. I will call out a long way ahead to find out if that's a friendly dog, because I've had bad experiences with Pitbulls. (#9)

Finally the daily routines of owners and their families were shaped by implicit and explicit rules regarding where and when dogs can share public spaces with people. Concerns about city by-laws and being mindful of not intimidating other families meant that one owner refrained from walking her children to school with the dog, preferring to use the car (i.e., so the dog was contained during pick-ups and drop-offs) because of restrictions on dogs in and around playgrounds and school facilities.

I never took the dog to school, because they don't like having the dogs around the school. ... I know they had issue with some people always bringing their dogs and the dogs would bark at the fence. You know? And I just thought, you know, I don't want to do that. (#10)

Because local by-laws also prohibit tethering if an owner is not in sight, and most stores and restaurants in this setting do not allow pet dogs on the premises, several participants commented that dogs did not usually get walked or accompany them when they ran errands or ate out.

Aside from the influence of these different factors on the activity patterns of owners, the other prominent theme was how the loss of a pet dog changed people's routines and activities. We were fortunate to recruit four interview participants whose pet dogs had succumbed to old age or disease since they were recruited. These former owners were thus able to offer their perspectives and reflections upon the differences for them between their current circumstances, and when they were still caring for their animal. What stood out was the impact that the loss of a particular canine companion animal had on some individuals. These impacts were relational and contextual such that for the couple

we interviewed, while one partner found the absence of the dog meant she could exercise more easily [see #8 above], for the other, the recent death of their dog meant he had lost an important reason to get out and about.

I used to walk with Nikki [the dog]... and I've been intending to start walking more, but that um, is something that is more honoured in the breach than in the activity itself. So um, but I will, I will get started doing more. Um, I say, but I don't know if it's true ... Yes. Um, I have ha-. I have a metal valve in my heart. I have-, my lungs have problems. I have a pacemaker. Blah, blah, blah. You know? So, there's not going to be any frantic exercise, but I should walk more than I do, clearly. (#8)

Notably this owner filled out the original survey when he was still caring for his pet dog. At this time his impression was that he would likely only “participate a little less in physical activity” if he did not own a dog.

Being a dog-owner clearly had a significant impact on the day-to-day lives of the participants of this study. Looking after their dog helped to shape where they went, who they saw, and what they do. Furthermore, caring for a dog over its life-course had variable influences on physical activity levels for different people. Similarly, dog-ownership sometimes promoted and sometimes inhibited opportunities for social contact with others in their neighbourhoods. In addition, all of our interview participants were mindful that taking their dog out for a walk could affect other people not involved in the animal’s care. The use of a leash was seen as a measure that mitigated many of these effects. While we did not ask directly about people’s views on the topic, each owner affirmed personal responsibility for the behaviour of the dogs in their care.

Discussion

The relational approach we adopted for our analysis was consistent with participants’ stories, in which the dogs figured as active participants in shaping ties between people, and between people and places. As described by their owners, and as confirmed first-hand by the authors in visiting owners’ homes, meeting the dogs, and viewing memorabilia such as framed photographs, the dogs that are central to our study were not a homogenous lot. They varied in disposition, proclivities, energy level, and health status, for example. Furthermore, individual dogs were described by the owners as being fundamentally different depending on the context -- in different settings, with different people, with different dogs, or in proximity to other animals (e.g., cats, squirrels). Also, a dog’s roles and capacities could change over time, and did, according to their owners. In fact, some of the dogs had recently died. All of these elements, and more, could influence dog-walking and physical activity, more generally. Care was central to decisions surrounding dog-walking. In particular, variations in dog-walking related to a dog’s position in the life-course and subjective assessments about a dog’s ability to enjoy or cope with different places and activities.

Heterogeneity among the human-dog relationships at the centre of this study is particularly important to note, given that our participants were similar to one another in several respects. All

participants were of higher-SES, even though many of the neighbourhoods in which they lived are of mixed SES. All lived in detached or semi-detached housing, and identified themselves in the baseline questionnaires as home-owners (as opposed to renters). Yet much of what we were told in the 10 interviews reported on here are in line with findings from previous research based on survey questionnaires, focus group interviews, or both. In particular, our results highlight that dogs often encourage and support physical activity for non-owners. This corresponds to the findings of a longitudinal study of people living with type 2 diabetes in Lothian, Scotland, in which non-dog owners sometimes sought to accompany dog-owners in walking their pet, becoming a regular fixture in the animal's day-to-day care (Peel *et al.*, 2010). In a 'loaner dog' intervention with residents of public housing in the USA, meanwhile, adherence was high and the main reason given by the participants was that the dogs "need us to walk them." (Johnson and Meadows, 2010) This aspect of care fits with previous quantitative studies where "dog obligation" has been found to be a significant motivator of walking (Brown and Rhodes, 2006). It is worth noting, therefore, that highly-structured interview or survey instruments deployed in cross-sectional study designs are unlikely to uncover many dynamic aspects of the networks of care that surround a dog over its life-course.

In addition, this study confirms that the presence of dogs can discourage physical activity for both owners and non-owners, and can have significant impacts on how shared spaces are utilized. In line with Westgarth and colleagues' (2008) examination of dog-contact networks, dog-breed type seemed to influence who walked the dog(s), where they went and how they choose to interact with their animals and others in public spaces. While previous investigations have highlighted how loose and uncontrolled dogs in public places can deter physical activity (Toohey and Rock, 2011), our study indicates that perceptions about breed characteristics, problems like separation anxiety, and concerns about controlling multiple dogs at a time can lead owners to arrange for their dogs to be exercised by other people, sometimes on a paid basis. At the same time it must be noted that our entire sample were of higher SES. Yet not every dog owner can afford to spend a lot of time with their dog(s): some people hold down two or more jobs, feel unsafe walking in their neighbourhood, or are restricted in where they live because other rental properties will not allow them to keep their dogs (Scarlett *et al.*, 1999). Our results suggest that even more heterogeneity in human-dog relationships than what we found in this study should be anticipated in disadvantaged populations.

It is also worth noting how 'places' and 'practices' connect people and animals. Aside from creating opportunities for socialization, these contact structures would increase the spread of infectious diseases through canine populations, and, if the disease was zoonotic, potentially also through human populations – a finding supported by an earlier UK-based study (Westgarth *et al.*, 2009). Observed differences between: 'on-leash' and 'off-leash' behavior (sniffing, aggression and play); the common practice of allowing dogs off-leash in city parks; and, a dog's capacity to come into increased contact with other dogs and people while off-leash can only add to the complexity of these interactions (Westgarth *et al.*, 2010). Several interview participants also spoke about the convenience and amenity of different dog-walking sites, and how they tried to select a physical environment suited to their dogs' interests and physical capacities. In this regard, we can see that the effects of relationships between people and places are mediated by the characteristics of individuals both (human and nonhuman), their

interaction with each other, and the resources available to them through their shared social and physical environments (Cummins, et al., 2007). Frequency, duration and spatial patterns of dog-walking depended on relationships.

Our analysis confirms heterogeneity in the practical and emotional dimensions of what dog care involves for health among owners and families, but also for what the presence of dogs implies for overall health in communities, neighbourhoods, and populations. Given the renewed focus in many developed countries on the health effects of the social and physical environment, the way that public spaces are used as a resource for dog-care has implications for urban planning and management. As dog-walking becomes more focal in public health research, this article suggests that there will be value in conducting qualitative interviews and analyzing the interview data in geographic, cultural and socioeconomic terms. Yet we would not want to leave the impression that we simply need more qualitative research. In future surveys that focus or include questions on dog-walking, it would be helpful to ask about the social networks of both owners and the dogs themselves, characteristics of the dogs, and mobility for both owners and dogs. These types of questions have already been included in research on infectious disease (Westgarth, et al., 2008), but in our study, we did not ask specifically about infectious diseases and none of the participants named infectious disease risks as an influence on where their dogs were taken for walks, or any other aspect of dog-care. In health promotion, there has yet to be a holistic study undertaken of infectious disease, non-infectious diseases and well-being for both dogs and people. Focusing on networks of care and care practices through relational approaches promises to open up new avenues for responding compassionately to sickness and promoting health, in both canine and human populations.

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