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In part of a larger pilot study of dog walking as a physical activity intervention we assessed levels of attachment, social supports, and perceived mental health of 75 dog owners, identified through a tertiary-care veterinary hospital. Owners completed the Medical Outcomes Study (MOS) Social Support Survey, mental health component of the Short-Form-12 (SF-12) Health Survey, and the Lexington Attachment to Pets Scale (LAPS). Of particular interest was that younger owners had stronger attachments to their dogs ($r = -.488; p < .001$) and less social support ($r = .269; p = .021$). Our study

suggests the importance of companion animals for social support, particularly for those without close friends/relatives. For younger owners, our study reveals vulnerabilities in support networks that may warrant referrals to human helping professionals. We suggest the use of Carstensen's Socioemotional Selectivity Theory as an interpretive framework to underscore the importance of including companion animals as part of the human social convoy, especially in terms of providing affectionate and interactional social support.

Key words: animal companion, companion animal, human-animal bond, human-animal interaction, friend, pet

In this paper we focus on the social support and perceived mental health of a group of adults who walk their dogs. Following a brief contextual background on what is known about social support and mental health of animal owners, we look at a subset of findings from a pilot study. Based on our findings, we will discuss theoretical considerations, the importance of assessing the multidimensionality of social support, and implications for helping professionals.

Social Support and Mental Health

The positive health effects of human-animal companionship have long been documented (e.g., Franklin, Emmison, Haraway, & Travers, 2007; Garrity & Stallones, 1998; Lynch, 1977). The benefits of having an animal companion to provide physical and emotional support are well described in the literature (e.g., Albert & Anderson, 1997; Albert & Bulcroft, 1988; Cain, 1983; Carmack, 1985; Katcher & Beck, 1983; Kellert, 1980; Planchon, Templer, Stokes & Keller, 2002; Risley-Curtis, Holley, & Wolf, 2006; Sanders, 1993; Seigel, 1993; Voith, 1985). Companion animals may also serve as a source of human social support (Mugford & M'Comisky, 1975; Peretti, 1990; Serpell, 1991). Companion animals can serve as part of a friendship network, bolster their companions' sense of competence and self-worth, serve as a source for nurturance and love, and provide the opportunity for shared pleasure in spontaneous recreation and relaxation (Collis & McNicholas, 2001; Jennings, 1997; McNicholas & Collis, 2001; Wilson, Fuller & Cruess, 2001; Wilson, Fuller, & Triebenbacher, 1998).

"For centuries people have noted that animals can have a positive influence on human functioning" (Nimer & Lundahl,

2007, p. 225), and it is not unusual for companion animals to be seen as an essential element in family life (Eckstein, 2000). Human–animal interactions can have health benefits for owners, including lowering blood pressure (Allen, 2003), lowering stress (Barker, Rogers, Turner, Karpf, & Suthers-McCabe, 2003), increasing psychological support (Cutt & Giles-Corti, 2008), and even increasing physical activity (Cutt & Giles-Corti, 2007). Specific to mental health, a meta-analysis of five studies using animal-assisted activities to treat depression was performed by Souter and Miller (2007). Their findings indicate that animal-assisted interventions may be associated with fewer symptoms of depression, thus contributing to the patient’s mental health. These benefits are well documented (Woodward & Bauer, 2007).

Companion animals play a positive role in childhood development (e.g., Anderson & Olson, 2006; Bryant & Donnellan, 2007; Esposito, McCune, Griffin, & Maholmes, 2011; Furman, 1989). They also serve as a source of social and emotional support for elderly persons (e.g., Banks & Banks, 2002; Lust, Ryan-Haddad, Coover, & Snell, 2007; Wilson & Netting, 1987). Risley-Curtiss and her colleagues (2006a) describe the central role companion animals play in family systems from an ecological perspective, and building on the work of Wilson and Netting (1987), also offer a potential model for understanding women’s views of companion animals. Many women consider animals to be family members (Risley-Curtiss et al., 2006a), and men appear to consider animals as family, although not always equivalent to human family members (Risley-Curtiss, Holley, & Kodiene, 2011).

Companion animals are also important conduits of social capital. Social capital, “has been conceptualized as the features of social life—networks, norms and social trust—that enable participants to act together more effectively to pursue shared objectives, or to facilitate coordination and cooperation for mutual benefit” (Wood, Giles-Corti, & Bulsara, 2005, p. 1159). Dog walking, for example, is a social activity whereby an individual gets to know other dog owners, performs outdoor physical activity, and engages in communication and information sharing. Dog ownership can be “a protective factor for mental health, which in turn may influence attitudes toward, and participation in, the local community and relationships with people in the community” (Wood et al., 2005, p. 1162).

Thus, dog walkers become part of a larger community of interactions as they move along sidewalks, exercise within parks, and traverse their neighborhoods and local environments.

Our original research project was designed to study how a dog walking intervention might influence health. We had not hypothesized that younger owners would have significantly different social supports than older owners and had not attempted to recruit adults in various life stages in order to examine intergenerational differences across the adult life course. In retrospect, it was fortunate that we were able to recruit a diverse age group of adults. In fact, given the focus on isolation among older people and the potential vulnerabilities of old age, we would likely have thought older adults might have had lower social support scores than younger cohorts of adult owners. To our surprise, in the course of examining our data, we noticed that there appeared to be differences among older and younger dog walkers in terms of social support and perceived mental health. These differences caused us to explore the implications for owners at earlier stages of the life course and at later life stages to suggest theoretical explanations for these differences, recommend possible future research directions, and offer practice implications for exploring and honoring these potential differences.

Methods

As part of a larger pilot study of dog walking as a physical activity intervention (Owners and Pets Exercising Together [OPET]) we assessed levels of attachment, social support, and perceived mental health of a cohort of adult dog owners. The study was approved by the Institutional Review Board (IRB) and the Institutional Animal Care and Use Committee (IACUC) of the Uniformed Services University of the Health Sciences. Dog owners, 18 years and older, presenting for care at a tertiary-care veterinary hospital were recruited to participate through flyers posted in public areas of the hospital. Additionally, each dog owner was given a copy of the flyer upon check-in and a verbal invitation to participate was made by the treating veterinarian if the dog was two years of age or older and medically cleared to engage in physical activity.

Eligible participants returned for a follow-up appointment and met with a research associate who completed the informed consent process. Owners were asked to complete a demographic form and self-report measures related to their perceived health, physical activity, stress, social support, and relationship with their companion animals. Animal owners also completed the Medical Outcomes Study Support Survey (MOS Social Support Survey), the mental health component of the Short-Form-12 (SF-12) Health Survey, and the Lexington Attachment to Pets Scale (LAPS).

The MOS Social Support Survey was originally developed as a brief, self-administered, multidimensional social support survey for patients in the Medical Outcomes Study (Sherbourne & Stewart, 1991). Social support refers to the provision of psychological and material resources intended to assist a person in coping with stress. The MOS Social Support Survey begins by asking "how many close friends and close relatives do you have (people you feel at ease with and can talk to about what is on your mind)?" This question is followed by five-point (none of the time = 1, a little of the time = 2, some of the time = 3, most of the time = 4, and all of the time = 5) answer scales to measure four aspects of social support including: (1) tangible support; (2) affectionate support; (3) positive social interaction; and (4) emotional and informational support. Tangible support includes helping when confined to bed, taking one to the doctor, preparing meals, and doing chores. Affectionate support includes showing love and affection, hugging, and feeling wanted. Positive social interaction includes having a good time with, relaxing together, getting one's mind off things, and doing something enjoyable with. Emotional support includes listening, giving good advice, providing information, serving as a confidant, sharing worries and fear, turning to for suggestions, and understanding one's problems. Each subscale is scored by summing the responses checked (1-5) for the relevant items, with high scores indicating more support. Permission to use this instrument was obtained (Sherbourne & Stewart, 1991), and an overview of its background and psychometric properties is provided in McDowell and Newell (1996, pp. 138-139).

The Short-Form-12 (SF-12) Health Survey is a measure of

two components: (1) perceived mental health; and (2) physical functioning. In our study, we only used the mental health component to measure perceived mental health. This instrument is in the public domain. The mental health component of the SF-12 contains the following instructions and questions:

These questions are about how you feel and how things have been with you during the *past week*. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the *past week* . . . 'have you felt calm and peaceful,' and 'have you felt downhearted and blue.'

These statements are rated according to a six point scale (1 = all of the time, 2 = most of the time, 3 = a good bit of the time, 4 = some of the time, 5 = a little of the time, and 6 = none of the time). Construction of the mental health summary component of the SF-12 and its psychometric properties are provided in Ware, Kosinski, and Keller (1996).

Attachment has long been studied by persons interested in human–animal interaction (Bagley & Gonsman, 2005), and a number of tools have been developed to assess the human–animal relationship (Anderson, 2007). One of the most cited tools is the Lexington Attachment to Pets Scale (LAPS), which incorporates items from the Pet Attitude Scale (PAS), the Companion Animals Bonding Scale (CABS) developed by Poresky, Hendrix, Mosier, and Samuelson (1987), and the Pet Attitude Inventory (Wilson, Netting, & New, 1987). After obtaining permission, we chose the LAPS (Johnson, Garrity, & Stallones, 1992) due to its ease of use and excellent psychometric properties. It should be noted that LAPS has been used primarily with adult populations, but not extensively across cultural groups. The LAPS instrument asks pet owners to assess their level of agreement with 23 statements on a four-point scale (agree strongly = 3, agree somewhat = 2, disagree somewhat = 1, disagree strongly = 0). Item scores are summed, with higher scores indicating greater levels of attachment. Sample statements include: My pet means more to me than any of my friends; Quite often I confide in my pet; and I believe that pets should have the same rights and privileges as family members (see Table 3 for the entire list of LAPS' statements).

Table 1. Demographics of Dog Walkers (N = 75)

Demographic Information	Number	Percentage
Age		
18-30	17	22.7%
31-40	20	26.7%
41-50	13	17.3%
51-60	13	17.3%
61 and older	12	16.0%
Gender		
Male	13	17.3%
Female	62	82.7%
Marital Status		
Married	36	48.0%
Divorced	9	12.0%
Separated	1	1.3%
Never Married	29	38.7%
Living Arrangement		
Alone	15	20%
With Others	60	80%
Race		
Black/African American	6	8.0%
White	61	81.3%
Other	7	9.3%
Missing	1	1.3%
Income		
Less than \$20,000	2	2.7%
\$20,000- 40,000	14	18.7%
\$40,000- 60,000	4	5.3%
\$60,000- 80,000	15	20.0%
\$80,000-100,000	8	10.7%
Greater than \$100,000	32	42.7%
Education		
High School	4	5.3%
Some Technical School	2	2.7%
Technical School Graduate	3	4.0%
Some College	15	20.0%
College Graduate	23	30.7%
Post Graduate/Professional Degree	28	37.3%
Housing		
Single Family	40	53.3%
Townhouse	21	28.0%
Apartment/Condo	13	17.3%
Missing	1	1.3%

As records were received each document was encoded and inspected for errors. Unanswered items were coded as missing data. Demographic and survey data were analyzed using SPSS. Frequency distributions were generated and

correlational analyses were performed, followed by a series of linear regression models.

Results

Seventy-five (75) individuals began the study, and they were administered the measurements described earlier at baseline. It is these data that are reported here. The dog owner's average age was 43.5 years (range 18 - 73) and the dog's average age was 3 years (range 2 - 16). A typical owner was a single, White, educated, female living with others. Table 1 provides a summary of demographic characteristics.

Social Support

Overall, owners reported a high level of support. Most owners reported having one or more close relatives. When asked to report numbers of friends, however, 40% of study participants had either none ($n = 15$) or only one close friend ($n = 11$). Ten (10) owners indicated they had no close relatives.

Most participants reported that they had access to tangible support (someone to help if one was confined to bed, needed a doctor, needed help with preparing meals, or help with chores) most or all of the time. The majority of owners had access to affectionate support (love, hugs, and feeling wanted) most or all of the time as well. Similarly, the majority of owners had opportunities for positive social interaction (someone to have a good time with, relax with, help keep one's mind off things, and to enjoy), as well as to provide emotional and informational support. Table 2 provides a summary of participants' scores on the MOS Social Support Survey.

Attachment

All owners agreed with the statement "I consider my pet to be a friend." Fifty-two owners (72%) agreed with the statement that "my pet means more to me than any of my friends" and 59 (81%) agreed with the statement "I believe my pet is my best friend." Sixty-three owners (89%) loved their pets because their dog never judged them. Sixty-seven (92%) indicated that their pet knows when they are feeling badly. All owners indicated that they believed that loving their pets helped them to stay healthy and makes them feel happy. All owners saw their

pet as part of their family. Table 3 provides a summary of participants' scores on the LAPS.

Table 2. Participants' Scores on the Medical Outcomes Study (MOS) Social Support Survey (N = 74)

Type of Support	A Little to None of the Time	Some of the Time	Most to All of the Time
<i>Tangible Support</i>			
Someone to help if you were confined to bed	5 (6.8%)	15 (20.3%)	54 (73%)
Someone to take you to the doctor if you needed it	3 (4.1%)	6 (8.1%)	65 (87.8%)
Someone to prepare your meals if you were unable to do it yourself	5 (6.8%)	10 (13.5%)	59 (79.8%)
Someone to help with daily chores if you were sick	5 (6.8%)	16 (21.6%)	53 (71.6%)
<i>Affectionate</i>			
Someone who shows you love and affection	5 (6.8%)	3 (4.1%)	66 (89.2%)
Someone who hugs you	3 (4.1%)	12 (16.2%)	59 (79.7%)
Someone to love and make you feel wanted	2 (2.7%)	5 (6.8%)	67 (90.5%)
<i>Positive Social Interaction</i>			
Someone to have a good time with	2 (2.7%)	8 (10.8%)	64 (86.5%)
Someone to get together with for relaxation	4 (5.4%)	10 (13.5%)	60 (81.1%)
Someone to do things with to help you get your mind off things	6 (8.2%)	9 (12.2%)	59 (79.7%)
Someone to do something enjoyable with	3 (4.1%)	8 (10.8%)	63 (85.2%)
<i>Emotional or Informational Support</i>			
Someone you can count on to listen to you when you need to talk	3 (4.1%)	6 (8.1%)	65 (87.8%)
Someone to give you good advice about a crisis	2 (2.8%)	8 (10.8%)	64 (86.5%)
Someone to give you information to help you understand a situation	3 (4.1%)	4 (5.4%)	67 (90.5%)
Someone to confide in or talk to about yourself or your problems	1 (1.4%)	6 (8.1%)	67 (90.6%)
Someone whose advice you really want	5 (6.8%)	3 (4.1%)	66 (89.2%)
Someone to share your most private worries and fears with	3 (4.1%)	9 (12.2%)	62 (83.8%)
Someone to turn to for suggestions about how to deal with a personal problem	3 (4.1%)	4 (5.3%)	67 (90.5%)
Someone who understands your problems	5 (6.8%)	10 (13.5%)	59 (79.7%)

Instrument used with permission. Source: Sherbourne, C.D., Stewart, A.L. (1991). The MOS social support survey. *Soc.Sci.Med.* 32:713-714.

Age, LAPS, MOS, Friends/Relatives, and Perceived Mental Health

There were no statistically significant relationships between owners' scores on the LAPS and the MOS or its subscales. However, younger owners had stronger attachments to their dogs ($r = -.488$; $p < .001$) and less overall social support ($r = .269$; $p = .021$). Specifically, younger owners had less social

support on tangible ($r = .316$; $p = .006$) and emotional/informational support subscales ($r = .230$; $p = .049$) of the MOS. Additionally, owners' perceived mental health scores were higher when they had more friends/relatives ($r = .235$; $p = .048$). Table 4 provides a summary of the p values for Spearman correlations for owner age, LAPS, MOS, perceived mental health, and numbers of friends/relatives.

Multivariate Models

To determine if the association between age and attachment to companion animals might be explained by lack of social support, we fit a series of nested linear regression models, with LAPS scores as the dependent variable and independent variables added in four blocks in a hierarchical manner. In the first block, age was the only independent variable. As with the simple correlations, age was significantly associated with LAPS. For each additional year of age, the average LAPS score decreased by .274 ($p < .001$). In the second block we added demographic variables: income, education, sex, and race. These variables explained only an additional 4.5 percent of the model variance and did not contribute significantly to the fit of the model ($p = .560$). In the third block, we added marital status (coded to compare married versus not married). Marital status was entered separately from the other demographic variables because it may be more closely related to social support. The average LAPS for married subjects was 4.53 points lower than for unmarried subjects, but this did not quite reach statistical significance ($p = .053$). Finally, we added the four MOS subscale scores to the model. As a group, these variables did not significantly contribute to the fit of the model, explaining only 1.9 percent of the model variance ($p = .863$), and the association between age and LAPS was essentially unchanged. The estimated association between age and LAPS remained essentially unchanged across the four models (Table 5).

Discussion

There was little variation in attachment levels among owners in our study. All owners in our study affirmed that

Table 3. Participants' Scores on the Lexington Attachment to Pets Scale (LAPS)*

Item	Disagree Strongly	Disagree Somewhat	Agree Somewhat	Agree Strongly
a. My pet means more to me than any of my friends.	6 (8.3%)	14 (19.4%)	33 (45.8%)	19 (26.4%)
b. Quite often I confide in my pet.	13 (18.3%)	14 (19.7%)	24 (33.8%)	20 (28.2%)
c. I believe that pets should have the same rights and privileges as family members.	6 (8.3%)	17 (23.6%)	20 (27.8%)	29 (40.3%)
d. I believe my pet is my best friend.	7 (9.6%)	7 (9.6%)	26 (35.6%)	33 (45.2%)
e. Quite often, my feelings toward people are affected by the way they react to my pet.	7 (9.7%)	12 (16.7%)	32 (44.4%)	21 (29.2%)
f. I love my pet because he/she is more loyal to me than most of the people in my life.	14 (19.7%)	17 (23.9%)	25 (35.2%)	15 (21.1%)
g. I enjoy showing other people pictures of my pet.	4 (5.5%)	2 (2.7%)	31 (42.5%)	36 (49.3%)
h. I think my pet is just a pet.	59 (80.8%)	10 (13.7%)	2 (2.7%)	2 (2.7%)
i. I love my pet because it never judges me.	5 (7.0%)	3 (4.2%)	31 (43.7%)	32 (45.1%)
j. My pet knows when I'm feeling bad.	1 (1.4%)	5 (6.8%)	31 (42.5%)	36 (49.3%)
k. I often talk to other people about my pet.	0 (0%)	3 (4.2%)	34 (47.2%)	35 (48.6%)
l. My pet understands me.	4 (6.0%)	6 (9.0%)	33 (49.3%)	24 (35.8%)
m. I believe that loving my pet helps me stay healthy.	0 (0%)	0 (0%)	19 (27.6%)	50 (72.5%)
n. Pets deserve as much respect as humans do.	0 (0%)	1 (1.4%)	17 (23.6%)	54 (75.0%)
o. My pet and I have a close relationship.	0 (0%)	2 (2.8%)	16 (22.2%)	54 (75.0%)
p. I would do almost anything to take care of my pet.	0 (0%)	3 (4.2%)	11 (15.3%)	58 (80.6%)
q. I play with my pet quite often	0 (0%)	1 (1.4%)	26 (36.6%)	44 (62.0%)
r. I consider my pet to be a great companion.	0 (0%)	0 (0%)	12 (16.7%)	60 (83.3%)
s. My pet makes me feel happy	0 (0%)	0 (0%)	8 (11.1%)	64 (88.9%)
t. I feel that my pet is a part of my family.	0 (0%)	0 (0%)	5 (6.9%)	67 (93.1%)
u. I am not very attached to my pet.	67 (93.1%)	2 (2.8%)	3 (4.2%)	0 (0%)
v. Owning a pet adds to my happiness.	0 (0%)	0 (0%)	11 (15.3%)	61 (84.7%)
w. I consider my pet to be a friend.	0 (0%)	0 (0%)	10 (14.1%)	61 (85.9%)

*Note that numbers under each item add to 67-73 depending on missing data in which respondents did not always complete every item of the LAPS

their dogs contribute to their health, are great companions, make them happy, are part of their families, add happiness to their lives, and are their friends. It is important to note that high levels of attachment are not surprising, given that the sample drawn for this study comes from a tertiary care veterinary hospital to which highly bonded and committed owners will come for animal care. Therefore, the fact that all study participants show a strong bond needs to be considered within this context. Even with this high overall level of attachment, younger adults in our study were significantly more attached to their dogs than older participants.

Table 4. p-values for Spearman Correlations

	Owner Age	LAPS	Mental Health
Owner Age	n/a	-4.88 (.<.001**)	.059 (.626)
LAPS	-.488 (.<.001**)	n/a	-.092 (.514)
MOS score	.269 (.021*)	-.166 (.221)	.199 (.095)
MOS tangible	.316 (.006**)	-.220 (.103)	.035 (.772)
MOS affectionate	.201 (.086)	-.080 (.559)	.092 (.444)
MOS interaction	.164 (.162)	-.161 (.235)	.299 (.011*)
MOS emotional	.230 (.049*)	-.045 (.742)	.203 (.090)
Friends/ Relatives	.101 (.394)	-.048 (.725)	.235 (.048*)

*p < .05; **p < .01

What these findings reveal is a highly attached group of dog owners who have strong support from friends/relatives overall, with one caveat. Certain types of support appear to be less available the younger the owner's age. Why might this be?

Table 5. Variables Associated with LAPS in Linear Regression Models (N=55)

Variable	Model			
	1	2	3	4
	B (SE)	B (SE)	B (SE)	B (SE)
Constant	68.30 (3.26)	65.47 (7.03)	67.13 (6.89)	65.36 (10.26)
Age	-0.27*** (0.07)	-0.31*** (0.08)	-0.28** (0.08)	-0.26** (0.09)
Income		-0.19 (0.75)	0.38 (0.78)	0.26 (0.84)
Education		0.74 (1.02)	0.18 (1.03)	-0.07 (1.17)
Sex (M vs. F)		-3.90 (2.99)	-3.47 (2.92)	-3.06 (3.20)
Race (white vs. non-white)		0.90 (2.81)	1.61 (2.76)	2.07 (3.04)
Marital status (married vs. other)			-4.53 (2.33)	-5.87* (2.74)
MOS-tangible				-0.08 (0.47)
MOS-affection				1.01 (0.90)
MOS-interaction				-0.33 (0.67)
MOS-emotional				-0.09 (0.33)
Model R square	.221	.266	.319	.339
R square change	.221	.045	.053	.019
P value for R square change	<.001	.560	.058	.863

*p < .05 ; **p < .01, ***p<.001

Theoretical Considerations

Carstensen's Socioemotional Selectivity Theory may be helpful in interpreting these findings. This theory suggests that social preferences shift across the lifespan. Young adults are expansive in the way they approach the world, they are future-oriented and high information seeking as they learn how they fit within their respective environments. They may choose novel social partners and engage in interactions with many people in order to understand how the world works. "The theory is rooted in the functions of social contact and ...

posits that although the basic functions of interaction remain consistent across the life span, place in the life cycle influences the salience and effectiveness of specific functions" (Cartensen, 1992, p. 331). In early adulthood, new information is gained from interactions with others and much of what is learned may be novel. In social interaction people learn how to obtain help and gain information from others, and in this process of interaction they acquire and maintain their own self identity. As one ages and has more experience, interactions do not reveal as much new or novel information. As adults mature, self concept becomes more solidified and interaction with unfamiliar social partners may take more energy, with less being learned. "There is a reduced likelihood that interaction with casual social partners will be rewarding; yet, interaction with a select group of significant others becomes increasingly valuable" (Cartensen, 1992, p. 332). As individuals move across adulthood, Carstensen contends that adults grow more socially selective, reducing peripheral social contact in favor of close friends. Familiar others are one's central focus and source of comfort. When Carstensen (1995) asked who they would rather spend time with—a close friend/family member, a recent acquaintance, or the author of an interesting book—she found that young adults' choices were spread across all three. Older adults overwhelmingly chose the close friend.

Developmental theorists have likened this movement over the life course to convoy-building, first identified by Kahn and Antonucci (1980) and elaborated by Antonucci and Jackson (1987). The convoy-building model of social relations is based on a group of people moving through life together, deriving support, self definition, and continuity in the process. Cartensen contends that her research supports this convoy building process, as young adults search for and expand their number of social contacts and explore various relationships. As adults approach thirty, they may have identified a number of convoy members who become part of a lifelong support system, and they may begin discarding more superficial acquaintances or at least not paying as much emotional energy to these relationships. Similarly, as one ages, each decade will see the maximization of the convoy (a group of valued friends/relatives) and the relinquishing of less important

relationships (Carstensen, 1992). Essentially the convoy of close relationships does exactly what the MOS survey is attempting to capture—those friends/relations one feels at ease with and can talk with about anything on one's mind.

Socio-selectivity theory has focused on human relationships in terms of convoy building across the lifespan. Given the importance of companion animals in the lives of our study participants, we suggest that they are including their dogs as part of their convoy of close relationships and that it would be appropriate to be inclusive of human-animal relationships as part of the convoy. For respondents in this study, dogs were considered part of their family and they drew heavily upon them for social support in the areas of affection and interaction, regardless of age. Yet there are some types of social support that cannot be provided as easily by animal companions, and it appears that the younger dog walkers in our study may be vulnerable in some aspects of their support systems. It may be incumbent upon animal-helping professionals to be sensitive to the needs of their patients' owners in making appropriate referrals to human helping professionals.

If Socio-Selectivity Theory holds promise, perhaps younger adults in this study are still developing their convoys that will mature into more robust support systems in the future. Their current convoys are inclusive of dogs to which they are highly attached. It may also mean that older adults in the study have refined their convoys over time, honing in on those relationships that will yield tangible and emotional/information support as they age, but also maintaining close attachments to valued animal companions. In this study, dog owners have different numbers of people in their convoys, yet the number of close friends and relatives does not significantly vary by age. It is the perceived social support (particularly in the areas of tangible and emotional/information support) that varies by age. Perhaps this speaks to the difference between number of close friends/relatives and the quality of those same relationships when it comes to depending on others. "Closeness" may mean different things to different people, and the fact that perceived mental health is significantly related to numbers of close friends/relatives in our findings cannot be understated.

Assessing the Multidimensionality of Social Support

Our study participants overall reported a relatively high level of support. The majority of respondents reported sources of tangible support, affection, positive social interaction, and emotional/informational support most or all of the time. This is perhaps not surprising, given that our participants were an educated group of owners with relatively high incomes who could afford referral veterinary care. Interestingly, younger participants had significantly lower overall scores on the MOS, compared to older owners. The use of technology as a means of social support was not part of this study, but given the rapid change in social networking possibilities, it is possible that younger owners are more connected and rely more on social media than older owners. What bearing this has on social support is certainly worth pursuing in future research.

The MOS subscales of affectionate support and positive social interaction were not significantly different in terms of age, which is particularly interesting since affectionate and interactional support items are ones that could pertain to animal support and companionship as much as human support and interaction. For example, the affectionate subscale contains items such as showing love, hugging, and feeling wanted; whereas interaction includes having a good time, relaxing together, taking one's mind off things, and enjoying doing things together. When one looks at the items in these two categories, they are ones that an animal companion could fulfill. In fact, these items were closely related to those items on the LAPS with which almost everyone agreed.

There were two sections in the MOS that revealed where these age differences occurred: tangible support and emotional/informational support. Tangible support and emotional/informational support were lower for younger owners in these two categories. No matter how much their dogs mean to them, animals are not able to perform most of these activities. Under tangible support are items such as helping if the owner is confined to bed, taking them to the doctor, preparing meals, and helping with chores (instrumental activities). Even service or working dogs have their limitations in this regard. Emotional and informational support is more mixed in that dogs can certainly listen and can be close confidants, but it would not be

possible for them to give advice in a crisis or provide information or suggestions about how to deal with a difficult situation. Since the MOS combines emotional and informational into one subscale, this makes it difficult to fully assess how these dogs may be an incredible source of emotional support even if they are not able to provide information. Essentially, tangible support and some of the items under emotional/informational support contain those activities that are uniquely human and require instrumental intervention as well as human reason/advice giving. Certainly, one can confide in one's dog or share one's worries and fears, but garnering suggestions is just not possible. Similarly, a dog may not be "someone who understands your problems" in the same way a human being can (as stated on the MOS), even if all but 10 owners in the study agreed with the statement "my pet understands me." This points to the importance of perception. If owners perceive that their dogs are understanding them, then that is emotionally supportive. Understanding the person is not the same as understanding a problem. Thus, even though number of friends and relatives is positively related to perceived mental health, it does not follow that dogs may be particularly important for the mental health of young people with few friends and relatives because they cannot provide the forms of support that young people are more likely to lack. Of course, this assumes that family and friends are supportive, and in some cases this simply is not the situation, depending on how these relationships have evolved.

Implications for Helping Professionals

Our findings suggest a number of implications for helping professionals. While it is not surprising that all participants in this study are highly attached to their dogs, younger adults in this study are significantly more attached than older adults. Therefore, it may be important to clarify and carefully assess what types of social support can reasonably be expected from animal companions and what types may need to be provided by human companions. This means that practitioners may need to be sensitive to life course differences in needs for social support, recognizing that younger adults could be particularly vulnerable when it comes to having their social support needs met.

The concept of social support and the establishment of social networks have long appeared in the professional literature. For example, over 20 years ago Tracy and Whittaker (1990) introduced an assessment tool called the Social Network Map including friends, neighbors, formal services, household, other family, work/school, and clubs/organizations/church, and its multidimensionality is still very relevant. Given how important companion animals are in many people's lives, we suggest that animal relationships should be included in social network mapping in order to fully assess a person's social support network.

Attachment to animals could possibly be a boost to one's feelings of social support. Given the social support and perceived mental health needs of human beings at different stages of their lives, human helping professionals are expanding their roles to include veterinary medicine as more and more veterinarians recognize the intimate roles animals play in the family systems of their owners. These practitioners bring skills in intervening in family systems in which animals are seen as family members, offering social-psychological skills to address communication and interaction concerns, and even supporting the veterinarian's well-being in dealing with challenging family dynamics (Hafen, Rush, Reisbig, McDaniel, & White, 2007).

Risley-Curtiss and her colleagues (2006b) recommend that social workers routinely include questions during intake and assessment about clients' animals and what they mean to them. "Most families with companion animals regard them as family members, and affectionate relationships with pets can enhance health" (Risley-Curtiss et al., 2006a, p. 433). For the select group of participants in our study, their dogs are definitely considered part of their families. Our findings suggest that helping professionals, including veterinarians, may need to consider that their young adult owners of animals may be somewhat vulnerable in terms of certain types of social support until they have developed their convoys of support over time. Younger adult owners may draw even more heavily upon their animals as social supports in the areas of affectionate and interactional support, but in terms of emotional/informational and tangible support they may need assistance from human

helping professionals. In other words, dogs may be a highly valued part of one's social convoy, but knowing when to make an appropriate referral to a human service professional may be as important for younger adults whose support systems are in various stages of development, as it is for children and older adults who have long been recognized as vulnerable population groups.

Limitations

The sample in this paper is highly limited in that owners who bring their dogs to a tertiary clinic are a select group who can afford to seek specialized intervention. In addition, this is a highly educated, urban sample who participated in an exercise intervention program. We did not ask how many individuals were currently living in the household, which would be helpful to know as well in terms of the availability of social support. In terms of measurement, it should be noted that perceived mental health is self-reported and not a professional assessment of mental health status. Thus, these data cannot be generalized beyond the immediate group studied and additional work is needed to go beyond these pilot results.

Conclusion

The positive health effects of human–animal companionship and the benefits of having a companion to provide social support are well-known. Our study adds additional information describing how important a dog companion may be for a selected group of owners who bring their companion animal to a tertiary veterinary clinic, particularly for younger owners without close friends/relatives. It also points out the importance of including companion animals as part of the human social convoy, especially in terms of providing affectionate and interactional social support.

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