

The Impact of a Care Recipient's Pet on Caregiving Burden, Satisfaction, and Mastery: A Pilot Investigation

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Older adults who require assistance with their own self-care most likely need assistance with pet care. These pet care tasks are likely taken on by their family caregivers (i.e., informal caregivers). However, the potential impact of an older adult's pet on caregivers' emotional experiences has not been explored. Role theory was used to model the impact of a care recipient's pet (i.e., number of pet care tasks performed and the perceived costs of care recipients' pet ownership) on caregivers' levels of caregiving burden, satisfaction, and mastery. The moderating role of the perceived bond between the care recipient and their pet, the caregiver's closeness to the pet, and mutuality in the caregiver-care recipient relationship were also examined. Forty-nine caregivers who did not consider themselves to be co-owner of their care recipients' pet completed a one-time on-line survey. Path analyses controlling for perceptions of inadequate help were conducted separately for each outcome variable using the maximum likelihood for missing values. The perceived costs of the care recipients' pet ownership were directly associated with lower caregiving mastery. The perceived bond between the care recipient and their pet moderated the association between the number of pet care tasks and satisfaction. The caregivers' closeness to the pets moderated the association between the perceived costs and satisfaction. Caregiver-care recipient mutuality moderated the relationships between pet care tasks and burden, pet care tasks and mastery, and costs and mastery. Care recipients' pets are likely to have an impact on the subjective experiences within the role of caregiver. These impacts are likely qualified by the human-animal bond, and to a larger extent, the caregiver-care recipient relationship.

Keywords: caregiving, older adults, aging, pets, companion animals, role theory, mastery

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The Impact of Care Recipients' Pet on the Caregiving Experience

Older adults consistently describe a meaningful and loving, reciprocated relationship with their pets (Chur-Hansen, Winefield, & Beckwith, 2009; Peretti, 1990).

The bond with a pet may be particularly salient for older adults who experience physical or other limitations (Lago, Kafer, Delaney, & Connell, 1988; Ryan & Ziebland, 2015). However, changes in functional abilities are likely to make caring for a pet

difficult and, thus, pet care tasks may be taken on by an older adult's family caregiver. Pet care tasks may require the caregiver to devote additional resources (e.g., time, energy) to this already often-demanding role. Despite high prevalence of pet ownership in older adults (American Pet Products Association [APPA], 2016), the issue of care recipient pet ownership has been neglected by the caregiving literature. Likewise, the human-animal interaction literature has rarely examined the impact of older adults' pets beyond their direct relationship to their owner. Most caregivers do not live with their care recipients (National Alliance for Caregiving [NAC] & American Association of Retired Persons [AARP], 2015) and are therefore unlikely to consider themselves a co-owner of their care recipients' pet. Given these limitations in the literature, the present pilot study was conducted to begin to investigate the impact of a care recipient's pet on the subjective experiences within the role of family caregiver.

The Role of Family Caregiver

Family caregivers are individuals who provide care for someone requiring assistance in varied daily and/or health-related tasks due to physical, psychological, or cognitive impairment. The term is used in place of informal caregiver; family caregivers include non-kin or non-legal relations, such as friends, partners, or neighbors (National Academies of Science, Engineering, and Medicine [NASEM], 2016). The term conveys that the interpersonal connection between the

caregiver and their care recipient is the fundamental basis of the relationship. In 2015, the role of family caregiver for an adult aged 50 or older was taken on by 34.2 million people in the United States (NAC & AARP, 2015). The number of individuals taking on the role will grow along with the aging of the population (NASEM, 2016).

Role theory

Role theory postulates that individuals' lives are composed of multiple socially-based roles (e.g., child, spouse, parent, employee, friend) that are shaped by and enacted within socially-based expectations (Biddle, 1986). The theory has been used extensively in exploring and characterizing the caregiving experience (e.g., Gordon, Pruchno, Wilson-Genderson, Murphy, & Rose, 2011). Role theory is appropriate for understanding the role of family caregiver as it allows for the simultaneous consideration of how a role may negatively (e.g., role strain) and positively (e.g., role enhancement) impact individuals.

Fulfilling any role, and family caregiver in particular, requires the devotion of an individual's resources (e.g., time, energy). Role strain occurs when one role demands more resources than are available (Sieber, 1974). Role strain within the role of family caregiver is often conceptualized as caregiver burden (i.e., the stress and strain experienced within the role of family caregiver; Zarit, Reever, & Bach-Peterson, 1980). Taking on the role of family caregiver can also be positive. Role enhancement refers

to the promotion of well-being experienced due to taking on a role (Moen, Robison, & Dempster-McClain, 1995). Family caregivers for older adults described gaining a sense of accomplishment, and an improved relationship with their care recipient due to inhabiting the role (Scharlach, 1994). These beneficial outcomes from inhabiting the caregiver role are identified as caregiver satisfaction (Lawton, Moss, Kleban, Glicksman, & Rovine, 1991).

Caregiver burden and satisfaction may occur simultaneously (Lawton et al., 1991). While Lawton and colleagues' (1991) work was rooted in stress-process theory, their model is congruent with role theory's tenant that the experience within a role is often shaped by internal and external expectations and the resources available to fulfill the role (e.g., Biddle, 1986).

Caregiver burden. Family caregivers who experience higher rates of burden are more likely to experience adverse mental and physical health consequences due to taking on the role. Higher levels of caregiver burden were related to higher levels of caregiver anxiety and depression (Cannuscio et al., 2002), and negatively correlated to caregivers' overall health (Schultz & Beach, 1999) as well as their subjective well-being (Verbakel, Metzelthin, & Kempen, 2016).

Caregiver burden is shaped by the degree of care required and the level of help received from others. Situational factors, such as hours providing care and the number of activities of daily living that required assistance, were found to have a stronger positive association with burden than

demographics of the caregiver or the care recipient, such as age or type of relationship (e.g., spousal, adult child; Wullschleger, Lund, Caserta, & Wright, 1996). Furthermore, the desire for more help with care provision for the care recipient (i.e., from friends and family) was associated with higher rates of burden (Burton et al., 2012; Garlo, O'Leary, Van Ness, & Fried, 2010).

Caregiver satisfaction. Caregiver satisfaction refers to the perceived positive consequences of inhabiting the role, including affective outcomes (Lawton et al., 1991). Transitioning to the role of caregiver was found to have positive associations with psychological well-being (e.g., sense of purpose in life and personal growth; Marks, Lambert, & Choi, 2002). Most caregivers for an adult with a chronic illness reported enjoyment within and the importance of the role (i.e., caregiving esteem; Sautter et al., 2014). The degree of satisfaction and burden experienced within the role is also shaped by the degree mastery within that role.

Caregiving mastery. Mastery is an individual's subjective sense that he or she is able to control one's life and overcome obstacles (Pearlin, 1999); caregiving mastery is the belief that one is behaviorally competent within the role of caregiver (Lawton, Kleban, Moss, Rovine, & Glicksman, 1989). Mastery can moderate the impact of stressors on individuals' well-being by allowing them to conceptualize stressors as less threatening and to maintain the belief that they have control over a situation. Mastery can vary in response to changes in the demands and length of time within the role (Simpson & Carter, 2013).

The degree of caregiver mastery can indirectly influence caregivers' experiences and emotional outcomes. Caregiving mastery was found to moderate the effect of caregiving demands and role overload on depression and anxiety in caregivers for individuals with Alzheimer's disease (Pioli, 2010). Greater demands and role overload were associated with greater depression and anxiety, but higher levels of caregiver mastery weakened those associations.

The relationship with the care recipient. The interpersonal relationship with the care recipient often influences how situational factors shape the emotional experiences within the caregiver role. Mutuality refers to the quality of the interpersonal relationship between the caregiver and care recipient (Hirschfeld, 1983). Higher levels of mutuality indicate a relationship centered on reciprocated positive emotions (Archbold, Stewart, Greenlick, & Harvath, 1990). Lower levels were significantly associated with increased strain (Archbold et al., 1990) while higher mutuality was negatively associated with depression, anger, and total mood disturbance (Schumacher et al., 2008). Caregivers with higher mutuality with their care recipient experienced less caregiver burden over a two-year period compared to caregivers with lower levels of mutuality (Ball et al., 2010). High levels of mutuality were also found to buffer the effects of role strain, even when the demand for caring for care recipients with dementia was high (Yang, Liu, & Shyu, 2014).

Yang and colleagues (2014) found preparedness for the role had the same effect,

and that a high level of predictability (i.e., encountering what was expected of the role) was associated with a decrease in role strain over time. These findings suggest that both mutuality and mastery shape the emotional experience of the caregiver role. Furthermore, unanticipated expectations or tasks demanded of the role may have negative effects on family caregivers.

Care Recipients' Pets

While it has been established that structural and relational factors influence caregivers' experiences, the literature to date has failed to account for the potential role of care recipients' pets. Individuals who require assistance for their own activities of daily living are likely to have difficulty performing daily pet care tasks. Family caregivers are likely to have an existing relationship with their care recipients' pets. This relationship may have been established through direct contact between the caregiver and the pet, indirectly through stories about or photographs of the pet, or both. Spousal caregivers have reported that their shared pet with the spousal care recipient provided support and companionship for themselves and their spouse, helping to calm and provide a point of focus for the spouse, and promoting self-care behaviors (e.g., exercise, stress reduction) for the caregiver (Connell, Janevic, Solway, & McLaughlin, 2007). Many of these caregivers reported becoming closer to the pet since taking on the caregiver role, while a number also reported that caregiving demands made optimal pet care (e.g., spending enough time with the pet)

difficult. Unfortunately, no literature addressing the impact of a pet on caregivers who are not co-owners of their care recipients' pet could be identified. Given that the majority of family caregivers do not live with their care recipients (NAC & AARP 2015), it is unlikely that they consider themselves to be a co-owner of their care recipients' pets.

Recent evidence shows that family caregivers who are not co-owners do perform pet care tasks and activities for their older adult care recipients' pets (Bibbo & Proulx, 2018). Not only did the caregivers in the study devote resources toward the pets' basic needs (e.g., feeding, providing fresh water) and household tasks (e.g., removing fur, cleaning waste accidents), they also provided for the cat or dog's socioemotional needs (e.g., spending time with, petting). These results demonstrate that care recipients' pets can impact the instrumental facets of

caregiving, but it is unknown whether they impact family caregivers' subjective experiences.

To begin to address this gap in the literature, this pilot study investigated the effect of care recipients' pets on the subjective experiences within the family caregiver role. The first research question asked to what extent caregiver outcomes (i.e., burden, satisfaction, and mastery) were associated with both performed pet care tasks/activities and the perceived costs of the care recipients' pet ownership. The second research question inquired whether those associations were moderated by the relationships between the caregiver, care recipient, and the care recipient's pet (e.g., between the care recipient and the pet; the relationship between the caregiver and the care recipient; or the emotional relationship between the caregiver and the pet; see Figure 1).

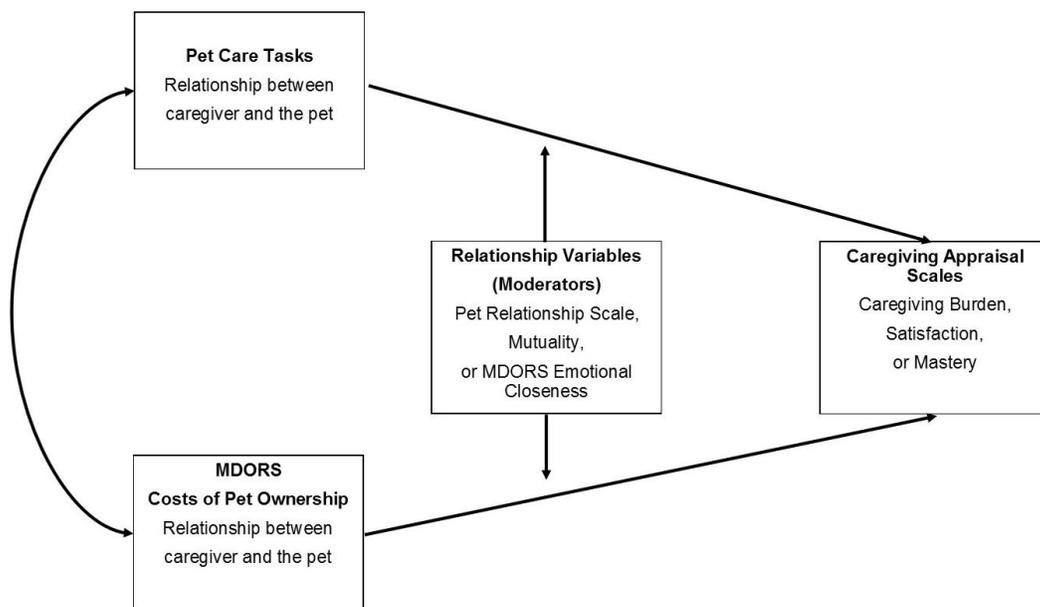


Figure 1. Direct effects of pet care tasks/activities and perceived costs of pet ownership, along with the moderating relationship variables, predicting caregiving outcomes.

Methods

This study was approved by the university's Institutional Review Board (IRB Protocol #2004336). Institutional Animal Care and Use Committee approval was not sought as pets were not active participants in the study.

Sample

Potential participants were not directly contacted by the investigators. Rather, recruitment was primarily conducted through online and in-person caregiver support groups and organizations. These groups made the flier or a link to the study available to their members. A more detailed account of the recruitment process can be found in (Bibbo & Proulx, 2018).

Participants were self-identified based on the following inclusion criteria: age 18 or older; the primary caregiver for an individual aged 50 or older who lived with at least one cat or dog; did not consider him or herself to be an owner or co-owner of that cat or dog; had provided care for a minimum of six months; was not paid to provide care; and had an established relationship (e.g., family, friend, or neighbor) with their care recipient prior to taking on the role of caregiver. Care recipients could have more than one pet of any species, but the participating caregivers must have been able to identify the individual cat or dog with whom the care recipient had the closest emotional bond. This animal was the focus pet of the study. The focus pet was limited to a cat and dog as the psychometrics for the pet relationship scales used in the

study had been established with pet owners of these two species.

Though pet care requirements of cats and dogs differ, both were included as they are the most common types of pets in the United States, with many households including both species (APPA, 2016). Participants were asked about the work they did for the specific pet, as opposed to all pets in the household, in order to maximize the reliability of the data. The inclusive definition of family caregiver (i.e., allowing all who identified as the primary caregiver regardless of the relationship to the care recipient) provided a more accurate depiction of the larger population of caregivers in the United States (NAC & AARP 2015; NASEM, 2016).

The anonymous online survey hosted by Qualtrics took approximately 40 minutes to complete. The link to the study brought potential participants to a detailed description of the study. Participants provided informed consent by clicking "I wish to continue" at the bottom of the page. Participants had the option to enter a drawing for one of 15 \$25 VISA gift cards on the final page of the survey.

The demographics of the caregivers and their care recipients are presented in Table 1. The sample was largely female, Caucasian, and well-educated. The majority were adult daughters caring for mothers. Despite the inclusion criteria, one participant reported that their care recipient was in their late forties, and this participant was retained in the sample. All data were collected from the caregivers; no care recipients participated in the study.

Table 1. Demographic Characteristics of Participants and their Care Recipients

Characteristic	Means (SD) or Percentages (n)	
	Participants (N = 49)	Care Recipients (N = 49)
Age	53.78 (14.26)	76.67% (10.36)
Female	85.71% (42)	73.47% (36)
Race/Ethnicity		
Caucasian	87.76% (43)	87.76% (43)
African American	4.08% (2)	2.04% (1)
Hispanic or Latino	6.12% (3)	8.16% (4)
Other	2.04% (1)	2.04% (1)
Education		
No high school	-	4.08% (2)
Some high school	-	14.29% (7)
High school	8.16% (4)	24.49% (12)
Some college	28.57% (14)	16.33% (8)
Associate's degree	10.20% (5)	10.20% (5)
Bachelor's degree	18.37% (9)	18.37% (9)
Graduate degree	24.49% (12)	6.12% (3)
Professional degree	10.20% (5)	6.12% (3)
Marital Status		
Married	59.18% (29)	38.78% (19)
Divorced	10.20% (5)	6.12% (3)
Widowed	-	48.98% (24)
Living with partner	4.08% (2)	4.08% (2)
Committed relationship	2.04% (1)	-
Single	24.49% (12)	2.04% (1)
Employment Status		
Full-time	44.90% (22)	-
Part-time	10.20% (5)	-
Not employed	18.37% (9)	-
Leave of absence	2.04% (1)	-
Retired	24.49% (12)	-
Relationship to care recipient		
Daughter	55.10% (27)	-
Son	6.12% (3)	-
Spouse	16.33% (8)	-
Partner	4.08% (2)	-
Other relative	10.20% (5)	-
Friend	8.16% (4)	-

Measures

Caregiver burden, satisfaction, and mastery. Participants' experience in the role of caregiver was measured with the caregiving burden (nine items; possible range: 9 – 45; sample item, “How often do you feel that because of caring for your care recipient you don't have time for yourself?”), caregiving satisfaction (six items; possible range: 6 – 30; sample item, “I get a sense of satisfaction from helping my care recipient.”), and caregiving mastery (six items; possible range: 6 – 30; sample item, “How often do you feel uncertain about what to do about your care recipient?”) subscales of the Caregiving Appraisal Scale (CAS; Lawton, Moss, Hoffman, & Perkinson, 2000a & 2000b). Higher scores indicated higher subjective experience of each construct. Cronbach's alphas were .92, .87, and .76 for burden, satisfaction, and mastery, respectively.

Pet caregiving tasks. The tasks involved in caring for the individual pet were taken from a Pet Care Sheet used at a pet-encouraging retirement community. The Pet Care Sheet addressed the basic needs of both cats and dogs (e.g., feeding, managing waste) and household tasks (e.g., removing fur in the home, cleaning waste accidents) but did not include the social or emotional needs of the animals (e.g., petting). These items were added by the first author with consultations from veterinary professionals. There were a total of 25 tasks/activities as well as an “other” option with corresponding space to elaborate. Participants were asked to, “Please indicate if you do any of these

tasks or activities,” as opposed to indicating if their care recipient wanted or required assistance for the tasks and activities.

Costs of and emotional closeness to the care recipient's pet. The Monash Dog Owner Relationship Scale (MDORS; Dwyer, Bennett, & Coleman, 2006) was used to measure participants' relationship with the focus pet. The MDORS was developed to measure specific aspects of the human-pet dog relationship using independent subscales (Dwyer et al., 2006). A study replaced the word “dog” with “cat” and found the subscales of Perceived Emotional Closeness and Perceived Costs had similar reliability with cat owners when compared to the original dog owning sample (Howell et al., 2017). For the purposes of this study, the language was further refined to reflect that the pet was not the participant's own pet. For example, an original item read, “How often do you feel that looking after your dog is a chore?” and was changed to, “How often do you feel that looking after your care recipient's dog is a chore?” For Emotional Closeness, an original item stated, “My dog helps me get through hard times” and was changed to “My care recipient's dog helps me get through hard times.” The revised subscales used in this study were approved by Dr. Pauleen Bennett, a co-author of the MDORS (personal communication, November 17, 2015). The subscale scores were averaged, with a possible range of 1 to 5 for each subscale. Alphas were .87 and .92 for Perceived Costs and Perceived Emotional Closeness, respectively.

Care recipients' emotional bond with their pets. Two subscales from the Pet

Relationship Scale (PRS; Kafer, Lago, Wambolt, & Harrington, 1992) measured the participants' perception of the bond their care recipient had to the identified pet. The subscales of Affectionate Companionship (eight items, possible range: 8 - 48) and Equal Family Member (seven items, possible range: 7 - 42) were used to produce a total score of the bond between the care recipient and the pet. Items range from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*), and higher scores indicated higher levels of bond with the pet. Participants were instructed to complete the scale based on their perception of their care recipient's relationship with the animal, not their own. The wording of items was modified to reflect these instructions. For example, the first item, "There are times I would be lonely except for my pet" was changed to, "There are times he or she [the care recipient] would be lonely except for the pet." The PRS had a Cronbach's alpha of .94.

Mutuality with care recipients. The Mutuality Scale within the Family Caregiving Inventory was used to measure the interpersonal relationship between the participants and their care recipients (Archbold, Stewart, Greenlick, & Harvath, 1992). Items asked caregivers' perceptions of how they and their care recipients felt about each other (sample items, "How close do you feel to him or her?", "How often does he/she express feelings of warmth toward you?"). The 15-item scale has a possible range of 15 to 60, with higher scores indicating greater mutuality, and had a Cronbach's alpha of .91.

Demographics. Demographic variables for both individuals included age, gender, race/ethnicity, highest level of

education, and marital status. These demographic items came from the California Caregiver Resource Centers' Uniform Assessment Tool (CCRC UAT; CCRC 2003). Items from the CCRC UAT assessed the number of hours per week spent providing care for the care recipient, as well as the hours of paid and unpaid caregiving help the participant received each week.

Inadequate help. The control variable of inadequate help was created from an item which asked participants, "Think about the help you get from your family and friends in looking after your care recipient. Please identify the one response that most closely identifies your help situation." The possible responses were: "I receive no help," "I receive far less help than I need," "I receive somewhat less help than I need," "I receive about what I need," and "I don't need any help" (CCRC, 2003). These responses were collapsed to create the dichotomous variable of inadequate help. The first three responses were grouped together and given the value of 1, indicating the participant received inadequate help; the final two responses were combined and given the value of 0, indicating the participant received adequate help.

Analysis

Due to a clerical error, data were missing for 30 participants on one item from the Pet Relationship Scale ("The pet gives him or her a reason to get up in the morning") and for two items on the Costs subscale of the MDORS ("It is annoying that I have to change my plans because of my care recipient's [cat or dog]" and "How often does

your care recipient’s [cat or dog] stop you from doing things you want to?”). However, the alphas from each scale when those items were dropped for all respondents indicated strong and comparable reliability and the total score of each scale was calculated without those items in order to maximize the analytic sample size. The possible range for Costs was unchanged, while the range for the PRS was decreased to 14 – 84.

Path analyses were conducted to allow for the possible covariation between the number of pet care tasks/activities caregivers performed for their care recipients’ pet and the perceived costs of their care recipient being a pet owner (Kline, 2011). The analysis method was also chosen as our model did not contain latent variables. Path analyses controlling for inadequate help were conducted separately for each outcome variable using maximum likelihood

estimation for missing values in Stata 15 with the level of statistical significance set at $p \leq 0.05$. Tests for multivariate normality were conducted using the *mvtest norm* command in Stata, which calculates four separate indices of multivariate normality, including Mardia’s (1970) multivariate skewness and kurtosis coefficients. All four indices suggest data met the requirements for multivariate normality ($p > .05$).

The second research question was assessed by conducting a separate path analysis for each moderator (i.e., PRS, MDORS closeness, and mutuality) and each outcome (i.e., caregiver burden, satisfaction, and mastery,) for a total of nine analyses. Model testing was not the aim of this pilot study; instead, the goal was to explore whether there were significant relationships between the predictor, outcome, and moderator variables.

Table 2. Descriptive Statistics for Caregivers whose Care Recipient had a Cat or Dog

Variable	Means (SD)		Possible Range	Group Difference (<i>p</i>)
	Cats (n = 14)	Dogs (n = 34)		
Predictors				
Pet Care Tasks Activities	12.33 (5.25) (n = 12)	16.27 (5.09) (n = 22)	0 – 25	0.034
Perceived Costs	1.91 (0.65)	2.27 (0.99)	1 – 5	0.285
Outcomes				
Burden	18.92 (10.48) (n = 13)	23.69 (8.30) (n = 32)	9 – 45	0.083
Satisfaction	22.86 (4.62)	22.18 (5.30)	6 – 30	0.938
Mastery	21.71 (4.89)	22.71 (3.66)	6 – 30	0.847
Moderators				
Pet Relationship Scale	54.93 (17.50)	65.06 (16.46)	14 – 84	0.046
Mutuality	48.64 (9.09)	44.76 (9.16)	15 – 60	0.147
Emotional Closeness	2.47 (0.76)	2.75 (1.04)	1 – 5	0.652

Note. Higher scores indicate experiencing more of the specific construct.

Post-hoc comparisons between caregivers whose care recipients owned cats and dogs were conducted to determine differences in predictor, moderator, and outcome variables between these groups (see Table 2). The scores of each of these variables fell within the limits of normal distribution (all skewness statistics between -0.723 and 0.652; all kurtosis statistics between -0.933 and 0.233); however non-parametric Kruskal-Wallis tests were conducted due to the disparity in group sizes.

Results

Sample Demographics

Participants had known their care recipients for an average of 43.08 years ($SD = 17.25$) and had been providing care for an average of 4.85 years ($SD = 4.71$). Participants reported spending an average of 56.12 hours per week ($SD = 58.54$) actively providing care for their care recipients. They received an average of 7.06 hours per week ($SD = 11.85$) of paid help and 13.12 hours per week ($SD = 23.56$) of unpaid help. Twelve (24.49%) caregivers reported they received no help, eight (16.33%) reported they received far less help than they needed, and nine (18.37%) reported they received somewhat less than they needed. Seventeen (34.69%) received about the amount of help they needed. Three caregivers (6.12%) reported they did not need any help.

Seventeen (34.69%) care recipients lived in their own home with family and 11 (22.45%) lived alone. Twelve (24.49%) lived in the caregiver's home, while one

(2.04%) lived in the home of another relative or friend. Six (12.24%) lived in an assisted living facility. Two care recipients (4.08%) lived in another unspecified residence. Alzheimer's disease was the most common primary diagnosis ($n = 13$, 26.54%). Care recipients had been diagnosed with their primary diagnosis for an average of 9.67 years ($SD = 9.13$).

Three-quarters of the caregivers ($n = 37$, 75.51%) were current pet owners, and the remainder had been in the past. All care recipients were current pet owners and lived with an average of 2.14 ($SD = 2.31$) pets. Participants reported that 34 (69.39%) care recipients were closest to a dog and 14 (28.57%) were closest to a cat; one caregiver (2.70%) did not report the species. Participants reported performing an average of 14.88 ($SD = 5.41$, $n = 34$) pet care tasks and activities for their care recipient's pet, and 11.21 ($SD = 16.37$, $n = 34$) hours per week providing for the pet (75.51%, $n = 37$; for more information, see Bibbo & Proulx, 2018).

Direct Impact of Care Recipients' Pets

Descriptive statistics and correlations between the predictor and outcome variables are presented in Table 3. The standardized and unstandardized results from the three path analyses addressing our first research question are presented in Table 4. Pet care tasks/activities and perceived costs of care recipient pet ownership were not

Table 3. Means, Standard Deviations, and Correlations between Model Variables

Measure	M (SD)	Correlations						
		1.	2.	3.	4.	5.	6.	7.
1. Pet Care Tasks Activities (n = 34)	14.88. (5.41)							
2. Perceived Costs	2.20 (0.93)	-0.12						
3. Burden (n=46)	22.65 (9.31)	0.33	0.18					
4. Satisfaction	22.37 (5.02)	0.07	-0.22	-0.33*				
5. Mastery	22.41 (3.99)	0.22	-0.34*	-0.26	0.43**			
6. Pet Relationship Scale	61.18 (18.22)	0.37*	-0.12	-0.23	0.09	0.24		
7. Mutuality	45.59 (9.37)	-0.24	-0.24	-0.53***	0.72***	0.34*	0.21	
8. Emotional Closeness	2.67 (0.96)	0.53**	-0.45**	0.19	0.18	0.13	0.06	0.07

Note. Higher scores indicate experiencing more of the specific construct. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Pet Care Tasks/Activities and Costs of Pet Ownership as Predictors of Caregiving Outcomes

	Burden			Satisfaction			Mastery					
	B	SE B	β	95% CI	B	SE B	β	95% CI	B	SE B	β	95% CI
Pet care tasks	0.44	0.25	0.25	-0.05, 0.92	0.02	0.15	0.02	-0.23, 0.34	0.14	0.13	0.18	-0.11, 0.38
Costs	1.95	1.31	0.19	-0.61, 4.52	-1.15	0.76	-0.21	-2.66, 0.34	-1.36*	0.58	-0.32*	-2.50, -0.22
R ²			0.26				0.05				0.15	

Note. All models included for inadequate help. CI = confidence interval. Higher scores indicate experiencing more of the specific construct.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Pet Relationship Scale as Moderator of the Associations between Pet Care Tasks, Costs, and Caregiving Outcomes

	Burden			Satisfaction			Mastery					
	B	SE B	β	95% CI	B	SE B	β	95% CI	B	SE B	β	95% CI
Pet care tasks	0.68**	0.25	0.41**	0.18, 1.18	-0.02	0.16	-0.02	-0.33, -0.05	0.01	0.15	0.02	-0.28, 0.31
Costs	3.39*	1.54	0.34*	0.38, 6.40	-1.88*	0.94	-0.35*	-3.72, -0.05	-0.84	0.72	-0.20	-2.25, 0.55
PRS	-0.16*	0.07	-0.32*	-0.30, -0.03	0.03	0.04	0.12	-0.05, 0.12	0.05	0.03	0.24	-0.01, 0.12
Pet care tasks X PRS	-0.01	0.02	-0.13	-0.05, 0.02	0.02*	0.01	0.40*	0.00, 0.04	-0.01	0.01	-0.13	-0.02, 0.01
Costs X PRS	-0.15	0.09	-0.27	-0.32, 0.02	0.02	0.05	0.06	-0.09, 0.12	-0.05	0.04	-0.21	-0.13, 0.03
R ²			0.39				0.17				0.19	

Note. All models included for inadequate help. CI = confidence interval. Higher scores indicate experiencing more of the specific construct.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6. Mutuality as Moderator of the Associations between Pet Care Tasks, Costs, and Caregiving Outcomes.

	Burden			Satisfaction			Mastery					
	B	SE B	β	95% CI	B	SE B	β	95% CI	B	SE B	β	95% CI
Pet care tasks	0.51*	0.24	0.29*	0.03, 0.98	0.24*	0.11	0.26*	0.04, 0.45	0.31**	0.11	0.42**	0.09, 0.53
Costs	1.28	1.19	0.13	-1.05, 3.62	0.08	0.50	-0.01	-0.91, 1.06	-1.32*	0.55	-0.31*	-2.39, -0.25
Mutuality	-0.40**	0.13	-0.40**	-0.66, -0.14	0.44***	0.05	0.82***	0.34, 0.54	0.13*	0.06	0.30*	0.02, 0.24
Pet care tasks X Mutuality	-0.07*	0.04	-0.28*	-0.14, -0.00	-0.07	0.02	-0.18	-0.05, 0.07	-0.04*	0.02	-0.38*	-0.08, -0.01
Costs X Mutuality	-0.10	0.15	-0.09	-0.20, 0.40	0.10	0.06	0.16	-0.02, 0.22	-0.15*	0.07	-0.31*	-0.29, -0.02
R ²			0.46				0.66				0.40	

Note. All models included for inadequate help. CI = confidence interval. Higher scores indicate experiencing more of the specific construct.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7. Closeness to Pet as Moderator of the Associations between Pet Care Tasks, Costs, and Caregiving Outcomes

	Burden			Satisfaction			Mastery					
	B	SE B	β	95% CI	B	SE B	β	95% CI	B	SE B	β	95% CI
Pet care tasks	0.27	0.35	0.15	-0.41, 0.95	0.19	0.20	0.20	-0.21, 0.58	0.26	0.17	0.35	-0.07, 0.59
Costs	1.26	1.74	0.13	-2.15, 4.68	0.45	0.99	0.08	-1.49, 2.40	-1.23	0.79	-0.26	-2.78, 0.31
Closeness	0.68	1.76	0.07	-2.78, 4.13	0.87	1.03	0.17	-1.15, 2.90	-0.66	0.84	-0.16	-2.31, 0.98
Pet care tasks X Closeness	-0.07	0.43	-0.03	-0.91, 0.77	.41	0.24	0.32	-0.07, 0.88	0.13	0.21	0.13	-0.29, 0.54
Costs X Closeness	-2.66	1.58	-0.26	-5.76, 0.43	2.07*	0.94	0.37*	0.23, 3.93	0.48	0.74	0.11	-0.98, 1.93
R ²			0.32				0.17				0.18	

Note. All models included for inadequate help. CI = confidence interval. Higher scores indicate experiencing more of the specific construct.

* $p < .05$. ** $p < .01$. *** $p < .001$.

significantly correlated in any of the models (all standardized $ps \geq 0.477$). Pet care tasks/activities did not have a direct association with any of the outcome variables. The perceived costs of the care recipient owning a pet was negatively associated only with caregiving mastery.

Relationships as Moderators

The standardized and unstandardized coefficients from the nine path analyses (i.e., each moderator with each outcome variable) are presented in Tables 5 – 7. There was no significant correlation between pet care tasks/activities and perceived costs of care recipient pet ownership in any of the models for the care recipients’ bond to the pet (all standardized $ps \leq 0.308$), mutuality (all standardized $ps \geq 0.653$), or closeness to the care recipient’s pet (all standardized $ps \geq 0.220$).

Care recipients’ bond to their pet.

The results for the moderating role of care recipients’ bond to their pet are presented in Table 5. The perceived strength of the bond between the care recipient and their pet moderated the association between the number of pet care tasks/activities performed and caregiving satisfaction. The number of pet care tasks/activities performed was positively associated with satisfaction when the bond was perceived to be strong. When the bond was perceived to be weak, the number of pet care tasks/activities was negatively associated with satisfaction.

Mutuality. Table 6 provides the results of models examining the moderating role of caregiver-care recipient mutuality.

Mutuality significantly moderated the relationship between a.) Pet care tasks/activities and burden; b.) Pet care tasks/activities and mastery; and c.) Perceived costs of caregivers' pet ownership and mastery. The number of pet care tasks/activities was associated with burden when caregivers reported low mutuality with their care recipient; when they reported low mutuality there was no association between the variables. There was also a positive association between pet care tasks/activities and mastery when caregivers reported low mutuality, while no association existed when caregivers reported high mutuality with their care recipient. The perceived costs of the care recipients' pet ownership were negatively associated with mastery when caregivers experienced a high level of mutuality. There was no association between the perceived costs and mastery when mutuality was low.

Closeness to the care recipient's pet. The moderating effect of the caregivers' own bond to their care recipient's pet is presented in Table 7. The perceived costs of the care recipients' pet ownership were positively associated with satisfaction when caregivers had a high level of closeness to their care recipients' pet. Perceived costs were negatively associated with satisfaction when caregivers had a low level of closeness to the pet.

Discussion

This pilot study indicates that a care recipient's pet can significantly impact family caregivers' experiences in the

caregiver role. Further, it provides evidence that the impact does not stem directly from the resources allocated to the pet, but is largely shaped by relationship variables, particularly the quality of the relationship with the care recipient.

Family caregivers spend noteworthy time each week providing for their care recipients' pets. Despite this, the number of pet care tasks/activities was not directly associated with any emotional outcome measured here. However, the negative association between the perceived costs of the care recipients' pet ownership and caregiving mastery may provide further evidence that the perception of a stressor often has more of an impact on outcomes than the stressors' objective qualities (e.g., Pearlin, 1999). This negative association may also be rooted in role expectations, in that providing for the needs of a pet may not have been an anticipated component of the caregiving role.

The covariation between the number of pet care tasks performed and the perceived costs of the care recipients' pet ownership status was not significant in any of the models. This unexpected finding suggests that the amount of resources required of the caregiver is not related to the perceived costs of pet ownership. We cannot determine any direct relationships between pet care related factors and the emotional experience within the role of family caregiver. However, the relationship variables do provide a starting point to understand when pet care and perceived costs of ownership shape the experiences within the role of family caregiver.

Moderating Role of Relationship Variables

There were several instances in which relationship variables buffered or enhanced the association between caregiver outcomes and the number of pet care tasks or the costs of care recipient pet ownership. Given the general lack of direct effects, these moderation results are particularly interesting, and suggest a high-quality relationship may be protective of caregivers' subjective well-being. Pet care tasks/activities may provide satisfaction within the role for caregivers who perceive a strong bond between their care recipient and the recipient's pet. Caregivers may regard these pet care tasks/activities as indirectly providing for their care recipient's well-being, thus enhancing their satisfaction in the role. When the care recipient's bond is perceived to be weak, caregivers may feel that they are allocating extra resources without the benefit of satisfying expectations of the role (i.e., directly providing for the care recipient).

One of the more intriguing findings was that for caregivers who report low mutuality with their care recipients, the more pet care tasks enacted, the higher was caregiving mastery. No evidence suggests that these caregivers are more likely to have their own emotional bond to the pet; however, they may receive positive reinforcement (e.g., appreciation, being welcomed at the door) that they do not receive from the care recipient. It is also possible that the pet provided emotional support to the caregiver. The companionship and support that spousal caregivers received

from their own pet in the work of Connell and colleagues (2007) might have been experienced by caregivers in this study even though they did not consider themselves to be owners of the pets. Further research is required, as explanations for the causes behind any of these moderating effects is currently speculative. Qualitative data and analyses would provide a starting point to understand the underlying causes of the relationship variables' moderating effects.

Limitations and Future Directions

The results of this study are limited in their generalizability due to the small sample size. This limitation is exacerbated by the number of missing data on the pet care tasks/activities items and individual items missing from the PRS and the MDORS Perceived Emotional Closeness subscale. The sample size also limited the number of control variables accounted for in the analysis. Consequently, the variable of inadequate help was constructed and employed as an indicator of burden, as it indirectly measured whether the caregiver had adequate resources and/or assistance to successfully manage the role. However, other potential control variables not accounted for in our model, such as living with the care recipient, may have had an impact on the number of pet care tasks and activities performed (e.g., performing more tasks/activities when co-residing) as well as our outcome variables.

The small sample size prevented us from analyzing the direct effects of pet care tasks and perceived costs of pet ownership, as

well as our moderating variables, on all our outcomes simultaneously. As is typical in path analysis, our models were just-identified, with zero degrees of freedom, prohibiting us from attaining model fit statistics such as the chi-square (Kline, 2011). However, we were able to measure the variance accounted for and the significant relationships between the variable in each model.

The results of this study must also be considered within the context that all caregivers were either current or past pet owners (although this was not a criterion for study inclusion), likely making them familiar with pet care tasks/activities. In addition, the majority of the sample were providing care for a parent and may have grown up in a household which encouraged pet ownership. These pet ownership factors might have influenced the results reported here.

The experience of caring for a care recipient with a cat may be distinct from caring for someone with a dog. The results of the post-hoc analyses indicated that caregivers performed more pet care tasks/activities for dogs; however, they also were closer to their care recipients' dogs than to their cats. Given our finding that the perceived costs of care recipients' pet ownership are positively associated with caregiving satisfaction, caregivers whose care recipients own a dog may be more likely to experience satisfaction within the caregiving role than those whose care recipients have a cat. Further, the established association between dog walking and adults' physical health (Curl, Bibbo, & Johnson, 2017; Cutt, Giles-Corti, Knuiiman,

Timperio, & Bull, 2008; Ham & Epping, 2006), suggests that regularly walking a care recipient's dog may have an impact on caregivers' physical health and warrants future study.

Our inclusive inclusion criteria regarding the relationship between the caregivers and their care recipients, as well as the primary diagnosis of the care recipients, may have also influenced our results. The aim of our study was to begin to understand how a care recipient's pet may influence experiences within the role of caregiver. Caregivers' ages and the needs of their care recipients can vary depending on these demographic factors (NAC & AARP, 2015). Future studies with more homogenous caregiving samples may be better able to isolate the impact of pets on the caregiving experience.

The results only provide the subjective experiences of the participating caregivers and do not address how the pet affects the care recipient (e.g., motivation to engage in self-care behaviors or psychosocial well-being; Brooks et al., 2012), nor do the results directly measure the emotional bond between the care recipients and their pets. However, the results do provide evidence that a pet that is not considered to be "owned" by an individual may still have an impact on that individual's experiences.

Implications

Studies investigating the physical and psychological outcomes associated with pets have almost exclusively focused on pet owners. The small amount of research

conducted on the effects of pets on caregiving for an adult has either focused on investigating caregivers who considered themselves to be a co-guardian of the pet with their care recipients or studied the influence of the caregivers' own pet (e.g., Connell et al., 2007). Yet, national statistics suggest that most caregivers would not consider themselves to be a guardian or co-guardian of their care recipients' pet (e.g., the majority do not live with their care recipients; NAC & AARP, 2015). The care recipient's pet is likely to be perceived by caregivers as an aspect of the caregiving role that requires resources. Therefore, the possibility exists that the pet could contribute to caregiver burden. The results of this study indicate that this may be the case when the quality of the relationship with the care recipient is low.

The effects of the pets on the caregiving experience were best understood when the relationships between the caregiver, care recipient, and pet were considered. Clearly, the effect of the pet is shaped not merely by the resources it requires of the caregiver, but how it is viewed within the larger relationship with the care recipient. Each individual's direct relationship to the pet may not have as great an influence on the caregiving role as the relationship between the two individuals. Our results provide further support for the importance of mutuality in the caregiving experience (e.g., Park & Schumacher, 2014).

Care recipients' pets may provide unique opportunities to facilitate caregiving satisfaction and caregiving mastery within the context of these interlinked relationships. The results of this pilot study underscore the

necessity of investigating the influence of pets beyond the person-pet dyad. Caregiving studies and services should include care recipient's pet ownership status to fully understand and support the caregiving experience.

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