



## Original Article

# Predicting caregiver burden in general veterinary clients: Contribution of companion animal clinical signs and problem behaviors

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## ABSTRACT

Caregiver burden, found in many clients with a chronically or terminally ill companion animal, has been linked to poorer psychosocial function in the client and greater utilization of non-billable veterinary services. To reduce client caregiver burden, its determinants must first be identified. This study examined if companion animal clinical signs and problem behaviors predict veterinary client burden within broader client- and patient-based risk factor models. Data were collected in two phases. Phase 1 included 238 companion animal owners, including those with a sick companion animal ( $n = 119$ ) and matched healthy controls ( $n = 119$ ) recruited online. Phase 2 was comprised of 602 small animal general veterinary hospital clients ( $n = 95$  with a sick dog or cat). Participants completed cross-sectional online assessments of caregiver burden, psychosocial resources (social support, active coping, self-mastery), and an item pool of companion animal clinical signs and problem behaviors.

Several signs/behaviors correlated with burden, most prominently: weakness, appearing sad/depressed or anxious, appearing to have pain/discomfort, change in personality, frequent urination, and excessive sleeping/lethargy. Within patient-based risk factors, caregiver burden was predicted by frequency of the companion animal's signs/behaviors ( $P < .01$ ). Within client-based factors, potentially modifiable factors of client reaction to the animal's signs/behaviors ( $P = .01$ ), and client sense of control ( $P < .04$ ) predicted burden. Understanding burden may enhance veterinarian-client communication, and is important due to potential downstream effects of client burden, such as higher workload for the veterinarian. Supporting the client's sense of control may help alleviate burden when amelioration of the companion animal's presentation is not feasible.

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## Introduction

Management of a companion animal's protracted illness can be complex and time consuming for the client. Recent work demonstrates "caregiver burden," the response to difficulties encountered while providing care for an individual with an illness (Zarit et al., 1980), is present in samples of companion animal owners and veterinary clients providing care for an animal with a chronic or terminal disease (Christiansen et al., 2013, 2016; Spitznagel et al., 2017; Spitznagel et al., in press). This burden is linked to multiple negative psychosocial outcomes, including higher levels of stress, symptoms of depression and anxiety, and

lower quality of life (Spitznagel et al., 2017; Spitznagel et al., in press).

Within human caregiving relationships, contributors to burden are well-established (Tremont et al., 2005) and can be conceptualized into "modifiable" and "non-modifiable" predictors. There are many non-modifiable factors which predict burden, including caregiver variables such as lower socioeconomic status, female gender, younger age, and care recipient variables such as duration/stage of illness (Schulz et al., 1988; Mangone et al., 1993; Hadjistavropoulos et al., 1994; van den Heuvel et al., 2001; Thommessen et al., 2002; Pinquart and Sörenson, 2003; Gonzalez et al., 2011); these are not readily altered. In contrast, several modifiable risk factors for burden have been identified, including low self-efficacy or sense of control, poor social support, and inadequate coping skills in the caregiver, and care recipient behavior problems (Schulz et al., 1988; Pruchno et al., 1990; Draper et al., 1992; Coen et al., 1997; McClenahan and Weinman, 1998;

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Grant et al., 2000; van den Heuvel et al., 2001; Pinquart and Sörenson, 2003; Davis and Tremont, 2007; Tremont, 2011; Springate and Tremont, 2014). Within such modifiable risk factors lies potential for intervention.

Understanding client burden is important for veterinarians, as it is linked not only to negative client outcomes, but also to non-billable veterinary service utilization (Spitznagel et al., in press). Additionally, fuller appreciation of the client's experience might increase empathic responses, enhancing the veterinarian-client-patient relationship. To date, research measurement of caregiver burden in the veterinary client has utilized an adapted version of the Zarit Burden Interview (ZBI; Zarit et al., 1980). Although effective as a research tool, its focus on the client's emotional state (e.g., "Do you feel you have lost control over your life since your pet's illness?") may be off-putting in a typical veterinary practice, where the client expects to report on the health status of the animal, but may be less comfortable disclosing details of his or her own personal experience. Client distress in relation to a companion animal's illness has been previously examined in specific disease presentations such as diabetes (Niessen et al., 2010), skin disease (Noli et al., 2011), epilepsy (Nettifee et al., 2017), and tumor (Giuffrida et al., 2017). A measure that broadly predicts client caregiver burden while asking about the companion animal's problems may be a useful tool in general veterinary medicine, as well.

The purpose of the current study was two-fold: first, to create a broad measure of common clinical signs and problem behaviors in the companion animal with a chronic or terminal disease, and to establish if measurement of these is associated with client caregiver burden, and second, to examine how well this measure predicts caregiver burden within models of client- and patient-based modifiable and non-modifiable risk factors. Results were expected to perhaps mirror findings from the human caregiving literature, but hypotheses were considered exploratory.

## Materials and methods

### Participants

This study took place in three stages: an initial open-ended veterinarian survey stage to generate an item pool, followed by two validation phases of cross-sectional data collection with companion animal owners.

Surveys to generate an item pool of potentially stressful complaints from clients with companion animals diagnosed with a chronic or terminal illness were anonymously completed by 19 veterinarians recruited from local small animal

hospitals. The sole inclusion criterion for participants was current employment as a small animal veterinarian.

Two phases of data collection from companion animal owners were then undertaken. Participants have been previously described (Spitznagel et al., 2017; Spitznagel et al., in press). Briefly, Phase 1 recruited participants via social media for an online study with inclusion criteria of: 18 years of age, English-speaking, owning/currently residing with a dog or cat, and utilizing veterinary services for that animal. From 600 responses received, 119 respondents with complete and valid data reported a companion animal with a chronic or terminal disease. These were matched to healthy controls based on human age/gender and pet species without reference to other variables for a total sample of 238. Phase 2 recruited participants from a small animal general veterinary hospital using the same criteria. From 910 responses received, incomplete, invalid, or duplicate responses were excluded for a total of 602 participants, including participants reporting on a companion animal that was sick ( $n=95$ ). (See Fig. 1 for enrollment and inclusion).

### Measures

#### Companion animal clinical signs and problem behaviors

An item pool to create a new Pet Problem Severity Scale (PPSS) was developed during the initial stage by asking veterinarians anonymously responding to an open-ended survey to identify "stressful" (for the client) presenting complaints for companion animals with a chronic or terminal illness. Of note, veterinarians were deemed better poised than companion animal owners to generate a broad and general initial item pool, given their breadth of experience with a variety of presentations, relative to companion animal owners, who are likely to have experience with far fewer diseases. Problems were collated using items cited by more than one veterinarian or items cited only once, but receiving agreement from veterinarians on our research team; veterinarians on our team (DMJ, MDC) contributed six additional items not represented to create a 31-item pool of clinical signs. Items were presented to companion animal owners in a format similar to a scale used in dementia caregiver research (Teri et al., 1992), which lists problems, asking the caregiver to rate the frequency of occurrence during the past week and the caregiver's reaction to each problem. A 5-point scale assessed both "frequency" (0 = never occurred to 4 = occurs daily or more often) and "reaction" (0 = n/a; not at all bothered/upset to 4 = extremely bothered/upset). While a total of 31 items were included in the original item pool, we planned to eliminate any items failing to discriminate healthy companion animals from those with a chronic or terminal illness (See Appendix: Supplementary material file for final measure). On the final measure, a frequency subscale is calculated by summing frequency items, and a reaction subscale is calculated by summing reaction items. Space for "other" problems is added to allow the client to list other concerns; entries here should be considered by the clinician as part of the total picture, but are not included in the total score.

### Burden

Caregiver burden was assessed using an adaptation of the ZBI that was recently validated in companion animal owners and veterinary clients (Spitznagel et al., 2017; Spitznagel et al., in press), with a cut score of 18 proposed to indicate burden. Psychometric properties of the adapted instrument include internal consistency (Cronbach's  $\alpha$ ) of .90–.92 and convergent validity (correlation with the Pet Owner Adherence Scale; Talamonti et al., 2015),  $r_s = .51$ –.69.

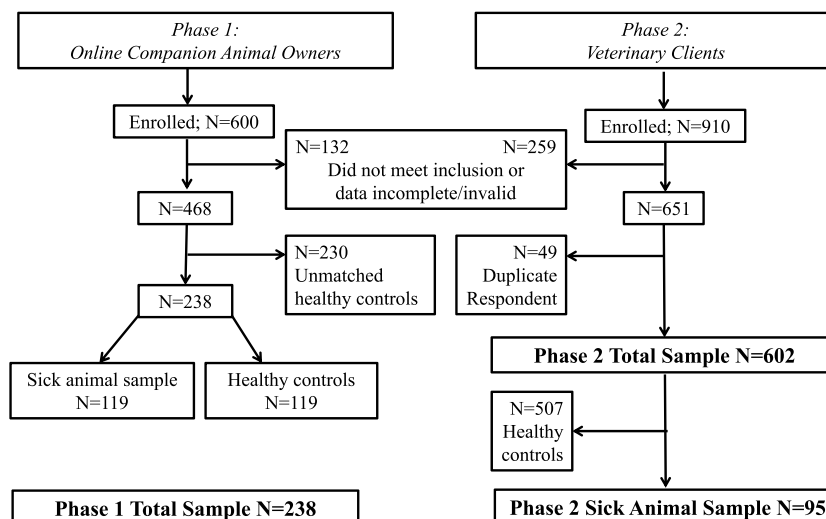


Fig. 1. Enrollment and inclusion.

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