Topics in Compan An Med 31 (2016) 152–159

Topical Review

Companion Animal Owner Perceptions, Knowledge, and Beliefs Regarding Pain Management in End-of-Life Care

Roschelle Heuberger, PhD[a,*], Michael Petty, DVM[b], Janice Huntingford, DVM[c]

Keywords:
pain management
end of life
companion animals

[a]*Department of Human Environmental Studies, Central Michigan University, Mt. Pleasant, MI, USA*

[b]*Arbor Pointe Veterinary Hospital, Canton, MI, USA*

[c]*Essex Animal Hospital, Essex, Ontario, Canada*

*Address reprint requests to Roschelle Heuberger, Department of Human Environmental Studies, 106A Wightman Hall, Central Michigan University, Mt. Pleasant, MI 48859

E-mail: Heube1ra@cmich.edu (R. Heuberger)

The senior companion animal is the fastest growing segment of the pet population. End-of-life care, quality of life, and pain management (PM) are extremely important to pet owners. Research into PM and end-of-life care is essential due to lack of information on owner knowledge, attitudes, and beliefs. A survey was developed to gather information from owners. Surveys were developed using expert focus groups, and participants were recruited through social media. Survey validation employed emergent themes and grounded theory. Data from respondents ($n = 986$) were analyzed using descriptive statistics, Kruskal-Wallis, Jonckheere-Terpstra, or Wilcoxon rank-sum tests, with post hoc adjustment. Approximately 87% of respondents felt that euthanizing for unmitigated pain was appropriate. Households where there were multiple pets, both cats and dogs, and owners who were not first-time pet owners showed even greater preferences ($P < .05$) for euthanasia with unmitigated pain. Pain control was important to respondents, but owners lacked knowledge and had unrealistic attitudes and beliefs about treatment options, costs, and long-term feasibility. Limitations of this research included homogeneity of online survey respondents and convenience sampling. Translational research should be fostered to increase the availability and affordability of PM techniques in veterinary practice.

Introduction

According to the recent data, the senior companion animal is the fastest growing segment of the pet population in the United States.[1] End-of-life (EOL) care, pain management (PM), and quality of life (QOL) are extremely important to the owners of these aging pets as many now consider them as surrogate children. EOL care often involves PM in an effort to improve QOL for the senior pet. Over the past decade, new drugs and techniques for PM in small animals have increased dramatically. Combination drug treatment, new generations of analgesics, alternate routes of administration (e.g., transdermal, mist, and intrathecal) as well as alternatives such as chiropractic, acupuncture, myofascial pressure points, physical therapy, orthotics, and prosthetics, among others have been adapted for use in the small companion animal.[2-8]

Concepts such as “pain management protocols,” “hospice,” “palliation,” “geriatrics,” and “EOL” with “in home” care have also transitioned and been heightened by the introduction of mobile veterinary units and technological advance. QOL, EOL care, and comfort are important parameters for senior pet owners.[9-12] Validated, reliable rating scales for both pain and QOL in pets have become accessible and widely used.[13] With the advent of the human hospice movement, many pet owners, particularly those involved in human health care, have knowledge of techniques and approaches used in human medicine and desire to apply these techniques and approaches to their pet. In addition, owners want PM options that are easy to administer and fiscally conservative.[14,15] The owner’s beliefs as well as the veterinarian’s ability to deliver individualized PM protocols influence PM in EOL care. These topics are difficult to discuss and information regarding new advances may not be available to the lay person.

Research into PM and EOL care is of great importance with respect to the burgeoning senior and veteran pet population in the United States. However, the current scientific body of literature contains little information on owner knowledge, attitudes, and beliefs (KABs) regarding PM, its relationship to QOL, and its effects on EOL decision-making.[16,17] For this reason, a survey was developed to determine KABs regarding PM and EOL care in the aging companion animal.

Methods

Survey Development

Surveys were developed using expert focus groups, emergent themes, and grounded theory. Veterinarians, veterinary technicians, cat owners, dog owners, and non–animal owners made up 2 focus groups. One focus group was done online followed by another done in-person. Questions were derived from validated human health care surveys previously used in the determination of KABs regarding PM and EOL decision-making. Questionnaires were refined using the feedback obtained from stakeholders. Sample size was determined from pilot studies ($n = 700$) and 33% was added to account for incomplete or missing data ($n = 931$). This research was deemed exempt category #2 (federal statute) by the Institutional Review Board at the primary institution where the research was conducted, in accordance with the standards put forth in the Declaration of Helsinki, regarding research in human subjects.

Subject Recruitment

Respondent recruitment was performed using social media venues from 2014-2015, and groups of interest were oversampled. Examples of oversampling include repeated

http://dx.doi.org/10.1053/j.tcam.2017.02.001
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recruitment from hunting dog owner social media groups to recruit male respondents, repeated advertising of the survey on social media sites that were dedicated to the senior pet owner or rescuer, and recruitment from sites that were dedicated to a specific disease state in a companion animal breed or species (e.g., symmetrical lupoid onychodystrophy). This was done to attract persons with familiarity and an investment in PM, and EOL care and decision-making. Respondents to the online survey gave their informed consent by agreeing to the terms specified on the opening page of the SurveyMonkey, and hitting the "next" button to access the questionnaire. Participation was entirely voluntary, unincentivized, and could be terminated at any juncture.

Data Processing and Analysis

Data were collected from SurveyMonkey, exported in tabulated excel spreadsheets, and imported into SPSS v.21 IBM, Amok, NY. Data were cleaned, coded, and analyzed in SPSS v.21. The criteria used to clean data were failure to report $>25\%$ of survey questions, occupation as a Veterinarian or Registered Veterinary Technician, aged younger than 18 years, or failure to have ever owned a small companion animal of any kind. These respondents were excluded for 3 reasons—insufficient data to stratify by age, race, or other demographic; the questionnaire was to be completed by nonveterinary professionals (there was a separate survey for veterinary professionals); or because the survey was approved by Institutional Review Board for use in adults only. Data from respondents ($n = 986$) were analyzed using descriptive statistics, cross tabulations, and were stratified by demographics or other characteristics for nonparametric analyses.

Non–normally distributed data were analyzed using Kruskal-Wallis, Jonckheere-Terpstra, or Wilcoxon rank-sum tests. Post hoc adjustment for multiple comparisons across groups was performed.[18] Data were collapsed when the sample size (n) was low and nonsignificant differences were seen between the groups that were being compared. Pet-related factors were used as either stratification variables or variables of interest across respondent groups. Owner's perceptions were analyzed without stratification across age, race, and religion because of either underrepresentation or lack of statistically different results with segmentation by demographics as outlined earlier. Perceptions of owners of companion animals are presented by subgroup, only when meaningful analyses or statistically significant differences are apparent.

Results

Descriptive statistics and frequencies of demographic data are shown in Table 1. Respondents were primarily middle aged, white, and female. Males were underrepresented in all analyses, as were all racial and ethnic groups aside from whites. Jewish, Muslim, Hindu, and Buddhist religious groups were also underrepresented in contrast to self-identified Protestants, followed by Catholics. Frequencies of respondent KABs regarding pet health insurance, QOL rating scales, as well as select characteristics of ownership are presented in Table 2. In this sample, 81% of respondents viewed their companion animal as a family member. The response to the question regarding average pet losses experienced over a lifetime was ($\mu \pm$ S.D.) 10 ± 1.2 pets. Most respondents acquired their pet as an adult animal. Only 16% of the sample got their companion animal as a puppy or kitten.

With regard to pet ownership and respondent reporting in the total pool, multiple pet households were significantly greater than single pet homes ($P < .05$). Statistically greater numbers of single pet homes reported having a dog Ferret ownership was statistically significantly lower than dog or cat ownership ($P < .01$), and removal of ferret owners did not alter the significance of greater numbers of households having a dog, and the dog being the only pet. Respondents who were employed in a health profession did not have a greater inclination to purchase pet health insurance (16% vs. 13%) over the group not employed in health care. Persons with higher educational attainment had significantly fewer pets in the home and fist-time pet owners also had significantly fewer pets ($P < .01$). Age of the pet was significantly correlated with respondents' length of time of ownership of the pet ($P < .001$). Because health literacy has been cited as a factor in owner KABs about treatment options, Table 3 splits the respondent frequencies by occupation in a human health care field. There were no significant differences between the 2 groups in number of pets in the home, first-time pet ownership, species of pet, breeding, age of pets, use of pet health insurance, or method of acquisition of the pet. There was, however, a significant difference ($P < .01$) between the groups regarding the use of therapeutic massage, nerve block, and injections of corticosteroids between owners

Table 1
Demographics of Survey Respondents Split by Sex ($N = 986$)

Respondents ($N = 986$)	Females ($n = 903$)	Males ($n = 83$)		Females ($n = 903$)	Males ($n = 83$)
Age ($\mu \pm$ S.D.)	45.9 ± 13	45.9 ± 14	*Religion*		
Marital status			Protestant	36%	37%
Married	55%	71%	Catholic	20%	16%
Single	22%	12%	Jewish	2%	2%
Other	23%	17%	Muslim	0%	1%
Education			Other	42%	44%
HS	25%	27%	*Race*		
Associates	23%	15%	White	94%	93%
Bachelors	32%	35%	Other	6%	7%
Masters	16%	16%	*Health Rel. Occ.*		
Postmaster's level educational attainment	5%	7%	*($P < .01$) Not employed in health-related occupation**	*72%**	*93%**

HS, high school.

* Statistically significant at the level of $P < .01$ using binomial statistical probability.