

Exploring the Bond

Predictors of owner response to companion animal death in 177 clients from 14 practices in Ontario

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Objective—To identify predictors of grief and client desires and needs as they relate to pet death.

Design—Cross-sectional mail survey.

Sample Population—177 clients, from 14 randomly selected veterinary practices, whose cat or dog died between 6 and 43 days prior to returning the completed questionnaire.

Procedure—Veterinary practices were contacted weekly to obtain the names of clients whose pets had died until approximately 200 clients were identified. Clients were contacted by telephone, and a questionnaire designed to measure grief associated with pet death was mailed to those willing to participate within 1 to 14 days of their pet's death. The questionnaire measured potential correlates and modifiers of grief and included three outcome measures: social/emotional and physical consequences, thought processes, and despair. Demographic data were also collected.

Results—Approximately 30% of participants experienced severe grief. The most prominent risk factors for grief included level of attachment, euthanasia, societal attitudes toward pet death, and professional support from the veterinary team.

Conclusions and Clinical Relevance—Bivariate and multivariate analyses highlighted the impact owners' attitudes about euthanasia and professional intervention by the veterinary team had on reactions to pet death. Owners' perceptions of societal attitudes, also a predictor of grief, indicate that grief for pets is different than grief associated with other losses. (*J Am Vet Med Assoc* 2000;217:1303–1309)

To date there are few reports describing the variability in owners' reactions to pet death. In many cases, study sample populations have been biased toward greatly bereaved pet owners, resulting in findings that indicate all pet owners grieve in a similar fashion.¹ Researchers have also used assessment instruments that were originally intended to measure grief related to the death of a human, rather than ones designed for

measurement of responses to pet death.² Reports of these studies are contradictory in that some indicate that grieving associated with pet death is the same as grief experienced when a human companion dies,² whereas others indicate that the two types of loss do not elicit comparable grief.³ Rigorous investigation of human responses to pet death has begun to isolate predictors and correlates of grief.⁴ Overall, there is little satisfactory material on the range of reactions that people have to pet death to guide veterinarians in determining how to best assist bereaved pet owners.

The purpose of the study reported here was to examine owner response to companion animal death. Because there were no adequate instruments available to measure specific grief issues and reactions associated with pet death, a questionnaire was developed.⁴ Standard psychometric methods were used to assess the efficacy of the instrument.⁵ The questionnaire was shown to have high test/retest reliability and high to moderate internal consistency for 6 of 7 content areas. This questionnaire was distributed to a population-based sample, and responses were used to describe the range, magnitude, and overall nature of reactions that people experienced after their pet died and to identify correlates and potential modifiers of grief related to pet death.

Methods

Participant selection—Sample size calculations indicated that 150 participants were required to evaluate the variables of interest, and an original sample of 200 people was required to allow for nonresponders. Our previous experience indicates that close and continuous contact with participating veterinary clinics is necessary to engender support and ensure appropriate participant selection. From a list of veterinary clinics in southwestern Ontario (excluding Wellington County, which was the site of the original work), 14 veterinary clinics were selected, using formal random sampling. Although it was recognized there may be differences between clinics, we also believed there may be great variation among clients (participants) within a given clinic. A modest number of clinics was selected so that a larger number of clients from each clinic could be included. The principal investigator (CLA) and trained research assistants (second year veterinary students) met with veterinarians and their staff to explain the

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study and determine their willingness to participate. Prior to their involvement, research assistants participated in an 8-hour training seminar and three 2-hour sessions that focused on developing relationships with clients, interviewing skills, paraprofessional counselling skills (in the event that a client was distraught at the time of initial contact), and professionalism in dealing with veterinarians and staff.

Clinics were contacted on a weekly basis to obtain the names of clients whose pet (dog or cat) had died until approximately 200 participants were identified. These clients were contacted by telephone within 1 to 14 days of their pet's death and asked to participate in the study. Questionnaires were mailed to those who agreed to participate. Participants who did not return the questionnaire within 7 days were contacted via a follow-up letter or telephone call. Data were collected between June and August 1996.

Variable measurement and analyses—A questionnaire comprising 99 items grouped into seven content areas was used.⁶ Content areas included **social/emotional and physical consequences (SEP)**, despair, thought processes, attitudes toward euthanasia, societal attitudes toward pet death, personality characteristics of the participant, and professional support (**Appendix**). Questions were answered on a 7-point scale, ranging from strongly agree to strongly disagree. Twenty-five questions were adapted from the Grief Experience Inventory.⁷ Five additional questions requiring a yes or no response were used to assess degree of attachment and attitudes toward animals. Attitudes toward animals were measured by responses to questions such as “If I am/was upset about the death of my pet I would remind myself that s/he was just an animal.”

Participants were asked to complete a demographic information sheet with their age, marital status, education, income, employment, residence (eg, rural, city), and number of household members. Information about the pet was also obtained, including breed, age at death, length of time owned, the source of the pet, whether there were other pets in the household, and cause of the pet's death.

Data derived from questionnaires were reviewed, and items were reverse scored if necessary so that the direction of measurement was consistent. Descriptive statistics were calculated for individual items to identify the range of responses and missing values. One of any pair of questions was omitted if the questions were greatly redundant, as indicated by a high (0.95 and above) correlation coefficient. Each content area was tested for internal consistency, using Cronbach's α .⁸

Of the 7 content areas, 3 were considered outcomes (SEP, thought processes, and despair). Questions designed to measure responses in these areas included “After the death of my pet I had difficulty sleeping,” “The yearning for my pet was (is) so intense that I sometimes feel physical pain in my chest,” and “I am preoccupied with thoughts of my deceased pet.” Data from these content areas were analyzed, using actual scores. Data gathered from the 4 remaining areas and for some individual items were

transformed from the 7-point scale to agree, disagree, or neutral. Total scores were calculated by summing the total “agree” responses, dividing by the number of items in the content area, and expressing this value as a percentage. This was also done for neutral responses. Individual items within content areas were analyzed to highlight interesting findings or if there was poor internal consistency.

The 3 outcome variables were believed to represent grief in relation to pet death. Scores $\geq 60\%$ of the total score were considered to indicate a severe grief reaction. A binary variable was created, and respondents in the upper 40% for all 3 outcomes were considered to have experienced severe grief.

Potential predictor variables or covariates that were tested for association with outcomes were age and gender of participant, degree of attachment, attitudes toward animals, professional support from the veterinary team, attitudes toward euthanasia, life experience (including previous pet death), presence of stressful life events, whether the pet was euthanatized, and perception of societal attitudes toward pet death. Other factors, including social support, other pets in the household, residence (city versus rural), age of pet at time of death, length of time participant owned pet, species, cause of death, obtaining a new pet immediately following the previous pet's death, where the pet came from, and length of time between the pet's death and completion of the questionnaire, were also explored. Pearson correlation coefficients and *t*-tests were used to analyse 2-way associations between these variables and the 3 outcome variables (SEP, thought processes, and despair).

Multivariate analysis was performed, using least-squares regression for the 3 continuous outcomes. Variables associated unconditionally with an outcome were entered into models that were analyzed by use of backwards elimination. Because certain questions were only answered by a subset of respondents (eg, certain questions were relevant only for owners whose pet was euthanatized), separate models were created, including a subset of or all eligible variables. Diagnostic evaluations of models included goodness of fit, R-squared, analysis of residuals, and influential values. Statistical software was used to analyse data.^{b,c}

Results

Demographics—All practices that were approached agreed to participate ($n = 14$), and the participation rate for clients was 80% (177/221). To assess client characteristics, descriptive statistics were calculated from responses provided by the participants (**Table 1**). Participants ranged from 11 to 79 years old, and the mean age was 45 years old ($SD = 15$). The mean number of people in households surveyed was 3, with a range of 1 to 9 ($SD = 1.5$). Grief responses represented ownership of 90 (51%) cats and 87 (49%) dogs. One hundred fifty-four (87%) pets were euthanatized, and 23 (13%) died of other causes. More than 60% of these pets were mixed-breeds, and the remaining were purebred. Forty-five percent of pets had been rescued (eg, found stray, obtained from a humane society), 47% were purchased from a pet store or from

Table 1—Participant-related descriptive statistics

Variable	Frequency (%; n = 177)
Gender	
Female	135 (76)
Male	42 (24)
Marital status	
Married	122 (69)
Living with partner	19 (11)
Divorced	23 (13)
Single	9 (5)
Widowed	4 (2)
Education	
High school	58 (33)
College	53 (30)
Trade school	28 (16)
University (complete)	27 (15)
Did not complete high school	11 (6)
Income	
> 50,000	60 (34)
25,000–49,000	58 (33)
12,000–24,000	25 (14)
< 11,000	16 (9)
No response	18 (10)
Employment	
Employed	115 (65)
Unemployed	58 (33)
No response	4 (2)
Location of dwelling	
City	99 (56)
Small town (< 5,000)	34 (19)
Rural	27 (15)
Farm	12 (7)
No response	5 (3)

breeding stock, and the origin of 8% could not be identified, because no response to this question was provided. The median number of years that participants had owned their pets was 11 (range, 1 month to 21 years). Median age of pets at the time of their death was 11.5 years (range, 1 month to 21 years). The median number of individuals who participated from each practice was 11 (range, 1 to 28). Median number of veterinarians per practice was 3 (range, 1 to 4). Ten of the 14 practices routinely sent their clients condolence cards after a pet's death. Thirteen practices attempted to schedule euthanasia at quiet times during the day or evening, and 11 practices offered to perform euthanasia at clients' homes. Five practices offered some clients resources (eg, reading material such as pamphlets or video tapes) on the subject of pet death and grief, and 12 practices had a private room or sitting area for clients.

Questionnaire performance—Questionnaires were returned within 6 to 43 days after a pet died, with a median response time of 12 days. Missing values varied across participants and questions, but in general there was a high response frequency for all 99 questions. There was a 68% completion rate (121/177), and the median number of items missing was 2 (range, 1 to 41). There was high test/retest reliability when scores were compared between questions soliciting similar information. Three so-designed pairs of questions had interitem correlation coefficients of 0.84, 0.78, and 0.83. Information from 2 questions was omitted when analyzing characteristics of participants, because many people did not provide responses to those particular questions. Participants' responses to 7 additional questions in the professional support, attitudes toward

euthanasia, and optimism and despair content areas were not tabulated because of item redundancy.

Cronbach's α for 6 of the 7 content areas was between 0.52 and 0.90, which is adequate. Cronbach's α for the personality characteristics of participants scale was 0.22, which is low.

Descriptive statistics—The total possible score for SEP was 119; despair, 98; and thought processes, 63. Means and SD for the 3 outcomes (SEP, despair, and thought processes) were 73.5 (SD = 16.3), 53.3 (SD = 10.5), and 39.1 (SD = 7.5), respectively. A high score reflects agreement with a particular item and indicates that the respondent is experiencing a greater degree of grief than an individual who disagreed with that item. Twenty-seven percent (33/122) of respondents had high scores for all 3 outcomes and were considered to have experienced severe grief.

Results from the societal attitudes toward pet death (n = 177) content area indicate that approximately 50% of participants believed a stigma was associated with grieving for a deceased pet. This in turn influenced how they grieved. These individuals said they felt like there was something wrong with them, because they experienced grief after their pet died. They tried to avoid feeling badly by keeping busy and avoiding conflict with family members or friends about whether it was all right to mourn a deceased pet.

Questions from the personality characteristics of participants content area revealed that of participants who had experienced the death of a pet in the past (n = 150), 60% believed the first death experience was the most traumatic. Eighty-two percent believed the degree of attachment they had for their pet was the determining factor in the amount of grief they experienced. Approximately 60% of respondents said that previous experience coping with other serious life events (eg, the death of a beloved friend) helped them cope with the death of their pet. Almost 80% (143/177) of respondents indicated a positive relationship between professional support from the veterinary team and their ability to deal with their pet's death (Table 2).

Approximately half of all participants whose pets were euthanatized indicated they felt guilty about their decision to euthanatize their pet, they questioned their decision to consent to euthanasia for their pet, or they were bothered by the fact that they agreed to have their pet euthanatized. Sixteen percent said they felt like a murderer (Table 3).

Bivariate analysis—Several variables were unconditionally associated with 1 or more outcomes (Table 4). A significant relationship also was found between species of pet and grief. Dog owners were more likely than cat owners to experience all 3 domains of grief ($P < 0.05$). Participants who purchased their pet from a pet store, breeder, or newspaper ad scored significantly higher on SEP than participants whose pets came from other sources ($P < 0.05$). Owners of stray pets and purchased pets scored significantly higher in the thought processes content area ($P < 0.05$). Females had higher scores for SEP and despair ($P < 0.05$) than males. Participant's whose pet was euthanatized had lower scores for SEP ($P < 0.05$).

Table 2—Responses to items related to professional support (includes items pertaining to clients' expectations of veterinarians before, during, and after pet death)

Veterinarians should provide or respondents would have appreciated:	No.	Agree (%)	Disagree (%)	Neutral (%)	Missing value (%)
Emotional support following pet death	174	87	5	7	2
Time with the veterinarian to discuss whether euthanasia is the best option	152	67	12	7	14
The option to stay during euthanasia	151	67	16	4	15
An opportunity to discuss options available for the aftercare of pet (eg, burial, cremation)	173	66	25	7	2
An explanation of what happens to the pet's body after it dies	173	66	25	7	2
A condolence card	174	54	33	11	2
An opportunity to discuss the medical aspect of euthanasia with the veterinarian	151	54	23	8	15
Bill payment on a day other than the day of euthanasia	149	51	24	10	16
A telephone call following the pet's death	173	38	50	9	2
An opportunity to talk to veterinarian following the death of the pet	170	38	45	12	4
Time alone with the pet following euthanasia	149	34	45	7	16
Information regarding grief associated with pet death	175	22	70	13	2
Bill payment for euthanasia somewhere other than in the reception area	157	32	36	21	11

Table 3—Responses to items associated with attitudes toward euthanasia (includes participants' responses to euthanasia and their expectations for the veterinary profession relative to euthanasia processes)

Attitudes toward euthanasia	No.	Agree (%)	Disagree (%)	Neutral (%)	Missing value (%)
I believe that euthanasia is a good option to humanely ending my pet's life.	154	84	2	2	13
It bothered me to have my pet euthanatized.	152	64	18	4	14
One of the hardest things about the death of my pet was leaving the veterinary clinic without my pet.	138	61	12	5	22
My experience following pet death can be characterized as questioning whether I made the right decision.	153	46	33	7	14
After the death of my pet I felt guilty because I made the decision to euthanatize.	152	45	32	9	14
I felt like a murderer having my pet euthanatized.	153	16	61	10	14
I felt I was rushed into making a decision to euthanatize.	154	6	79	2	13

Table 4—Correlation analysis for potential predictor variables and the 3 domains of grief (social, emotional, and physical consequences [SEP]; thought processes; and despair)

Predictor variables	Outcomes of grief					
	SEP		Thought processes		Despair	
	R*	P-value	R	P-value	R	P-value
Age of participant†	-0.23	0.001	-0.17	0.03	-0.08	NS
Attachment	0.42	0.0001	0.34	0.001	0.35	0.001
Attitudes toward animals	0.32	0.0001	0.18	0.02	0.18	0.04
Attitudes toward euthanasia (I felt like a murderer having my pet euthanatized)	0.26	0.0001	0.46	0.0001	0.45	0.0001
Life experience (Having been through serious life events made me better able to deal with my pet's death)	0.24	0.001	0.24	0.001	0.24	NS
Societal attitudes toward pet death	0.48	0.0001	0.55	0.0001	0.51	0.0001
Professional support from veterinary team	0.24	0.0001	0.24	0.0001	0.11	NS

*Pearson correlation coefficient. †As age increased, grief decreased.

No significant relationships could be identified between grief and the number of days elapsed since a pet died (for a 1 to 43-day range), the acquisition of a new pet within approximately 1 month after a pet's death, social support, other pets in the household, the owner's place of residence (rural vs urban), the number of people living in the household, the age of the pet at the time of its death, the length of time a pet was owned, the cause of the pet's death, or the presence of other stressful life events.

Multivariate analysis—Two models were developed for each outcome. Because only participants that euthanatized their pets responded to the statement, "I felt like a murderer when I euthanatized my pet," models were created separately that included all other variables associated with the 3 outcomes and either the binary variable for euthanatized or the aforementioned question. Although parameter estimates varied slightly,

the resulting models were similar. The most consistent predictors of the 3 outcomes were level of attachment, societal attitudes toward pet death (eg, participants felt like there was something wrong with them because of the way they reacted to the death of their pet), professional support (participants believed members of the veterinary team could have better assisted them at the time of their pet's death), and euthanasia. Higher scores on attachment were related to higher scores on all 3 outcomes. Controlling for the effect of other variables in the model, participants whose pets were euthanatized had lower scores for outcome variables. When the variable "I felt like a murderer" replaced euthanasia there was little change associated with other variables in the model. Participants' desire for more professional support was predictive of higher SEP, indicating that grief was characterized by physical reactions such as sleeplessness and frequent crying. Inadequate professional support was also predictive of

thought processes such as trying to justify the pet's death, repeatedly rehearsing the details of the pet's death, guilt, and attempting to avoid thinking about the pet.

For participants whose pet was euthanatized, previous experience with death resulted in lower despair scores.

Discussion

Overall response rate for the study was high (80%). There were random missing values, but most items on the questionnaires were completed. This indicates that participants found the questions relevant to their experiences regarding their pet's death. The combined approach of a personal telephone call to introduce the study and its purposes and mailing questionnaires to participants was a sensitive and efficient means of conducting a large cross-sectional investigation into a highly emotional issue. During previous studies, we identified few statistical differences between the 2 possible methods of questionnaire administration (face-to-face vs mail).^a Training of technical support was also critical for obtaining responses that were representative of our sample while ensuring compassionate and professional interaction with participants.

There were few neutral responses from participants, which further substantiates the appropriateness of our questions. Items in the professional support content area received the highest percentage of neutral responses. Professional support items were designed to identify the type of service participants preferred to receive from their veterinarians. Suggested services ranged from condolence cards to provision of information about the grieving process. It is possible that some participants were unfamiliar with various professional support options, and this led to equivocal responses.

Approximately 30% of participants surveyed experienced severe grief. This result indicates that a client-sensitive approach to pet death is important in the practice in veterinary medicine. Clients' grief was characterized by physical and emotional reactions such as sleeplessness, loss of appetite, and "feeling like something died within them." Clients were also preoccupied with thoughts of their deceased pet and found it difficult to not encounter their pet in expected places. These participants experienced the full extent of grief and said they felt that life had lost its meaning. There was a group comparable in size that scored low on all outcomes, presumably indicating no, or a minor response, to their pets' deaths. The remaining participants had high scores on 1 or 2 of the 3 outcome measures. Results of this study indicate that the death of a pet can affect owners emotionally, physically, socially, and cognitively. The information obtained is useful for understanding how clients may react to pet death and for educating clients regarding what they might expect after their pet dies.

Although most participants were affected by their pets' deaths, they were not so severely affected that they could not maintain regular daily activities such as going to work, eating, sleeping, grocery shopping, parenting, etc. Most participants also indicated that,

although they were upset, they were optimistic about their ability to recover from their pet's death and engage in tasks associated with daily living. Our results do, however, reveal that degree of grief remained fairly consistent for approximately 6 weeks after a pet's death. Given society's current attitude toward pet death (eg, the expectation that people should not get too upset when a pet dies), it is uncertain whether participants were influenced to resume normal activity immediately following a pet's death because of fear of ridicule or reprimand from employers or friends or whether the impact of their pet's death was not sufficient to cause major changes in daily routines. It was interesting that more than 50% of respondents believed that society did not view the death of a pet as a loss worthy of grief.

The SEP outcome variable was highly characteristic of grief experienced by most participants, although there was some variability. Planchon and Templar⁹ constructed an instrument to measure grief in relation to the death of a cat or dog. A few of their independent variables were identical to those in the study described here (eg, cause of death, length of time pet had been owned, age of pet at death, owner living alone, another pet at time of death, age of owner, attitudes toward animals). They found that grief following the death of a dog was associated with living alone, being female, and a high degree of depression associated with death as measured by a depression inventory. Similarly, they found that grief following the death of a cat was associated with high death depression among young female participants. Age of owner and gender were associated with degree of grief in this study and that of Planchon and Templar.¹⁰ Reports in the literature vary considerably in their support for various predictors of grief. Differences may be attributed to variances in study design, sampling regime, instruments used to measure outcomes, definition of outcomes, and independent variables.

It appears that reactions to pet death are more likely to be associated with variables related to the owner (eg, whether they received support from their veterinarian, their attitude toward euthanasia, societal attitudes toward pet death, and attachment to the pet) than with factors related to pets (eg, age of pet at time of death, the presence of other pets in the household). It is possible that reactions to pet death are heavily embedded in societal norms and values. Norms and values may influence gender-specific reactions, whereas an individual's life stage or life experience and attitude toward the death of animals may be responsible for variability within and between individuals.

Results of our study also indicate that choosing euthanasia influences owner response to pet death. Although most participants believed euthanasia was a humane option, approximately one-half questioned whether they had made the right decision to euthanize their pet or felt guilty about their decision. Sixteen percent said they felt like a murderer. Although whether or not the pet was euthanatized was not unconditionally associated with thought processes or despair, it was associated with a lower SEP score. In multivariate analysis, after the effects of attachment, societal attitudes, and professional support were taken

into account, euthanasia was associated with lower scores on all 3 outcomes. Apparently, euthanasia is not necessarily a determining factor of grief except among participants who experience extreme guilt (to the point of equating euthanasia with murder). Low scores for 1 or more outcomes did not, however, preclude participants from feeling guilty or questioning their decision. It is likely that euthanasia was more of a moral and ethical dilemma for some participants than a grief-laden experience. Future studies should examine outcomes unique to euthanasia rather than outcomes specific to the emotions associated with pet death. Only 13% of pets in this study were not euthanatized. This group included pets that died traumatic unexpected deaths. Presumably, in cases where an animal is in extremis, euthanasia may not be disturbing for its owner. Within the group that had their pet euthanatized, attitude regarding euthanasia (felt like a murderer) was a significant predictor of grief. These findings indicate that euthanasia is an important and disturbing issue for many pet owners. Owners who are highly attached to their pets require professional support from their veterinarians, including heightened sensitivity to the discomfort and confusion associated with agreeing to end their pet's life.

More than half those responding said they were concerned about the disposition of their pet's body and dreaded seeing the body of a deceased animal. This finding also has implications for euthanasia services with respect to veterinarians preparing clients for their pet's death (eg, owner present or not), preparation of the pet's body for viewing after it has died (eg, grooming, cleaning, draping a blanket or fleece over the pet's body so that only its head is visible), and communication with clients about various aftercare options such as private or communal cremation, home or cemetery burial, or communal burial at a landfill.

Results of this study revealed that participants wanted specific services from the veterinary team around the time of their pet's death. Almost all respondents believed their veterinarian should provide emotional support before and after their pet's death, yet less than 40% indicated that having an opportunity to speak with the veterinarian following their pet's death was important to them. Professional emotional support is a broad category encompassing support derived from all members of the veterinary team, including veterinarians, technicians, receptionists, and other staff. Emotional support is conveyed through the veterinary team's ability to make clients feel comfortable when grief is expressed (eg, "You don't need to apologize for crying."), acknowledgement of the depth of the human-animal relationship (eg, "I can see that you love him very much."), and comforting words (eg, "It looks like this is very painful for you.") and gestures (eg, ensuring privacy in the exam room during euthanasia, listening attentively). Most participants wanted time to discuss euthanasia and aftercare options, which is not surprising given the complexity of the euthanasia issue for many participants. Approximately 70% wanted the option to be present during euthanasia. One-third of participants, whether they were present during their pet's death or not, want-

ed the option to say good-bye to their pet after it died and the opportunity to speak with their veterinarian prior to leaving the practice. About 50% of respondents indicated they would appreciate being able to pay the bill at another time and receiving a condolence card. Almost 40% said they would appreciate a telephone call following their pet's death. More than half of the participants said that one of the most difficult things for them to do was to leave the clinic without their pet. Telephone contact is a personable means of determining how clients are coping once they have returned home without their pet. Veterinarians should also talk to their clients about how they feel about leaving without their pet and assist them in devising a plan for the remainder of the day (eg, meet with a friend).

Veterinarians must realize that their approach to caring for a client whose pet has died has the potential to alleviate or aggravate grief. Most respondents believed there was a high association between their ability to deal with their pet's death and a veterinarian who was supportive around the time of that death. Variability in client desires and responses to pet death require that services be tailored to address each particular client. It is unclear whether a supportive veterinarian can modify the duration or magnitude of grief reactions or make clients feel better about a pet's death. However, it is likely that supportive veterinarians actually validate and normalize their clients' reactions, which, in turn, gives clients permission to grieve. Negative experiences at a veterinary practice certainly impact owners' responses. Grief is highly recognized as a vital step toward dealing with loss and moving toward recovery.¹⁰ Veterinarians have a substantial influence on an owner's ability to cope with the death of a pet. The results of this study support ongoing professionalization of approaches to pet death in veterinary practice and indicate that schools of veterinary medicine should provide students with opportunities to learn about the complex nature of grief in relation to pet death. Sensitivity toward clients coping with euthanasia and cultural responses to the death of their pet must be encouraged.

Results of our study also highlight the difference between grief associated with pet death and grief associated with human death. Linear regression analysis reveals that factors such as euthanasia and societal attitudes toward pet death are predictive of grief. These factors are not considered to be predictive of grief associated with human death. This result indicates that attempting to explain client responses to pet death on the basis of theories derived from analysis of human-human relationships and responses to human death is probably not appropriate.

It is important to recognize that the usefulness of linear regression models for describing complex attitudinal, sociologic, or psychologic relationships may be limited. Something as profound as owner response to pet death must be evaluated through qualitative as well as quantitative methods. We believe regression analysis performed as part of this study is a useful adjunct to qualitative and descriptive information obtained through prior development of the questionnaire. The models in this study help define the direction and mag-

nitude of associations between the variables of interest and various outcomes. The R^2 of our models is reasonable but also illustrates that there is some variation in outcome that remains unexplained. The unexplained portion of our model may reflect the shortcomings of linear modelling for complex social and psychologic phenomena or the limitations of a questionnaire for capturing all relevant information.

^aAdams C. *Owner grieving following companion animal death*. PhD thesis, Department of Population Medicine, University of Guelph, ON, Canada, 1996.

^bSPSS version 6.0, SPSS Inc, Chicago, IL.

^cSAS version 6, SAS Institute Inc, Cary, NC.

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Appendix

Description of 7 content areas in a questionnaire measuring owner response to pet death

Content area	No. of questions	Description
Social/emotional/physical consequences	18	Daily consequences associated with pet death including sleeplessness, crying, yearning for pet, and the role of social support.
Professional support	17	Participants' perceptions of the role of veterinarians in helping them cope with the death of their pets. Various aspects of veterinary practice, such as communication skills, provision of grief-related resources, and office protocols for dealing with death were rated in terms of value to participants at the time of their pets' deaths.
Despair	16	Intensity and duration of grief including feelings of hopelessness, ability to adjust without the pet, and anxiety about issues related to death.
Attitudes toward euthanasia	12	Feelings and attitudes about euthanasia and participants' perceptions of whether euthanasia intensified grief. This scale also measured participants' expectations of veterinarians in terms of protocols related to euthanasia and their perceived relationship to grief.
Thought processes	10	Thought processes including rationalization, justification, guilt, information organization (getting the facts straight), self-talk, elaboration, and integration of information. This scale also assessed preoccupation with death.
Societal attitudes toward pet death	10	The degree to which participants' reactions to pet death were governed by their perception of how they thought they should feel and behave as indicated by messages conveyed by society.
Characteristics of participants	8	Preexisting stressful life events, coping abilities, and overall preparation for dealing with pet death.