Asking About Pets Enhances Patient Communication and Care: A Pilot Study

Kate Hodgson, DVM, MHSc, CCMEP¹, Marcia Darling, BSc(Hons)², Douglas Freeman, DVM, PhD, DipACT³, and Alan Monavvari, MD, MHSc, CCFP, CHE, CPHQ⁴

Abstract
This research explored whether asking patients about their pets would enable better environmental/social history taking, and improve patient communication/care. Primary health care providers (PHPs) were surveyed about prevalence of patients living with pets, the health impact of pets, and influences on patient communication. Following an educational intervention, they committed to asking patients about their pets. A follow-up survey was conducted electronically. PHPs were recruited at a continuing medical education (CME) conference and at CME workshops. All 225 participants were PHPs. At the conference, participants were educated one-on-one about the clinical relevance of pets in the family. CME sessions were large or small group teaching. Baseline and final surveys measured awareness of pets in patients’ families, assessment of determinants of health, impact on rapport with patients, and patient care. A sign test assessed difference in scores using repeated-measures analysis. Binomial outcomes were assessed using Fisher’s exact test. Comments were themed. Ninety-four PHPs (42%) completed the study. Pet-related discussions opened communication with patients. Two-thirds of participants identified positive effects on practice and on relationships with patients. PHPs were able to leverage the health benefits of pets (zooeyia) and mitigate zoonotic risk. Asking patients about pets in the family reveals clinically relevant information, improves communication, and strengthens the therapeutic alliance.

Keywords
pets, communication, primary care, social capital, environmental health, patient care, activities of daily living, social environment, surveys and questionnaires, zooeyia

Purpose
Primary care encompasses patient-centered communication and care, exploring determinants of health, activating family resources, developing rapport, and building a therapeutic alliance with patients. Nonjudgmental, open-ended questions begin conversations with patients about how they live. Asking patients about their pets can open communication, reveal clinically relevant information, and offer insights into their lives. Sixty-five percent of American households include pets. Children are more likely to live with a pet than a sibling or their biological father. Pet owners think of their companion animals as members of the family. The strong bonds people have with their pets are a valuable resource to primary health care providers (PHPs), enabling implementation of self-care.

Pets both benefit and risk human health, affecting all areas of their owners’ lives. The positive effects (collectively known as zooeyia) are powerful. Pets build social capital and provide companionship. They motivate healthy behavior change, such as increasing physical activity and encouraging activities of daily living. They are agents of harm reduction, for example as a reason to quit smoking. Animal companions can complement medical and psychological therapy as part of patients’ normal lives, without additional cost. Like all relationships, pet ownership has its risks. The risk of zoonotic disease varies with the species of the pet and with the patient. Owners can be injured when interacting with their animals. Pets impact the shared environment and can challenge family resources (financial, emotional, and social).

¹University of Toronto, Ontario, Canada
²Medical Writer, Toronto, Ontario, Canada
³Western College of Veterinary Medicine, Saskatoon, Saskatchewan, Canada
⁴Markham Stouffville Hospital, Ontario, Canada

Received 24 February 2017; revised 27 August 2017; revised manuscript accepted 28 August 2017

Corresponding Author:
Kate Hodgson, Continuing Professional Development, Faculty of Medicine, University of Toronto, Suite 650, 500 University Avenue, Toronto, Ontario, Canada MSG 1V7.
Email: kd.hodgson@utoronto.ca
Despite these profound effects, PHPs may be unaware of pets in their patients’ families. This study explored 2 factors of PHPs asking their patients about pets in the family when collecting family/social histories and when clinically relevant:

- Does asking about pets enable PHPs to better assess determinants of health, social context, and environmental history?
- Do PHPs find that discussions about pets lead to improved patient communication and care?

Methods

Conforming to the protocol approved by the Research Ethics Board of Markham Stouffville Hospital, PHPs were recruited individually at Primary Care Today, a large continuing medical education (CME) symposium held on May 6-9, 2015, in Toronto. Four additional CME presentations were advertised through flyers distributed there and by email to members of the Ontario College of Family Physicians and the Ontario Medical Association. The family physicians, nurses, and social workers who attended these CME events were also invited to participate in the study. Informed consent was acquired from all participants. Each was randomly assigned a unique 4-digit number to enable matching data from baseline and follow-up surveys. No patient data were requested or collected.

A baseline survey focused on PHP’s general knowledge of their patients’ pets (how many live with pets and what pet-related discussions revealed about how their patients live), the frequency of discussions with patients about the 4 categories of zooeyia and the 4 categories of zoonotic risk, and whether the PHP had ever collaborated with a veterinarian regarding patient care.

CME interventions informed participants educated about the benefits of zooeyia, the zoonotic risks associated with pets, and the opportunity to facilitate interprofessional collaboration with veterinarians. An algorithm for asking about pets was reviewed:

- Are there pets in your extended family?
- If yes, how many? What species?
- May I have the contact information for your veterinarian?

Three kinds of educational intervention were used. Participants enrolled at Primary Care Today were educated individually by an investigator or a trained assistant. Those attending CME presentations took part in either large group lectures or a small group, case-based workshop. All were given a brochure highlighting salient points, including 25 references. Participants then verbally agreed to ask their patients about pets in their families when it was clinically relevant.

Following the educational interventions, monthly emails were sent to participants, reinforcing relevant information and inviting questions. After 3 to 4 months, they were invited to take a final online survey, which paralleled the baseline survey and asked for comments. Two reminders were sent as required. The survey was then closed, and data were analyzed.

Binomial outcomes (ie, yes or no answers) were analyzed using Fisher’s exact test. Differences were deemed statistically significant if \( P < .05 \). Where scores were recorded at baseline and at the end of the study, a sign test on the difference in scores was conducted (SAS). Categorical results (eg, frequency of patient discussions on specific topics) were converted to an ordinal scale based on the 5 categories, and \( P \) values were based on the change from baseline. Responses to open-ended questions were themed, using conventional content analysis.

Results

The 225 participants in the study represented a variety of health care professions, including physicians (120; 53%), social workers (30; 13%), nurse practitioners (29; 13%), pharmacists (14; 6%) and nurses (14; 6%). Most (147; 65%) were educated through individual academic outreach, 64 (28%) in large group lectures, and 12 (5%) participated in a case-based workshop. Ninety-four participants (42%) from multiple health care professions completed the study. Current pet owners were more frequently represented \( (P < .05) \) among those who completed the study. Previous pet experience did not affect the likelihood of study completion.

The type of educational intervention had some impact on the completion rate. Ninety-two percent \( (n = 11) \) of PHPs who participated in the case-based small group workshop completed the study, as did 47% \( (n = 30) \) of those who attended the large group lecture and 36% \( (n = 53) \) of PHPs educated through individual outreach.

Over the course of the study, PHPs better determined which of their patients lived with pets. Their confidence in their estimates of the prevalence of pet ownership among their patients increased significantly \( (P < .01; \text{Table 1}) \). The frequency of asking about pets increased significantly \( (P < .01) \). “ Routinely” asking about pets was defined in 2 ways to accommodate the usual language of participants’ professions: “when interviewing new patients or at periodic health review” and “in every nonemergency patient visit.” When the results of both categories were combined, routinely asking about pets increased significantly \( (P < .01) \). All PHPs had patients with pets. Their patients owned a variety of pets, most notably dogs and cats. The patients of most participants (76; 81%) owned more than 1 species of animal, including small mammals, reptiles, birds, and horses.

No PHP reported that patients were reluctant to answer questions about pets in the family. Patients were quick to answer (45; 48%), revealed more about themselves and their pets (66; 70%), and appeared to develop better rapport with the PHP (45; 48%). In response, patients presented clinically relevant information to the PHP.
Participants reported that they learned more about their patients’ physical activity (78; 83%), about patients’ family members and social capital (51; 54%), and about patients’ housing (51; 54%). Four participants (4%) reported that they learned nothing new about their patients when they asked about pets in the family.

Open-ended questions on the final survey asked about the impact of asking about pets on PHP’s practice and on their relationship with patients. The strongest impact was an improved therapeutic alliance with patients (Table 2). The final survey invited comments on challenges to asking about pets in patients’ families (Table 3). Twenty-seven participants (29%) found no challenge to asking about pets. The most commonly cited challenge was lack of time (n = 20; 21%), with several indicating this was due to patients’ enthusiasm for the topic of their pets. Some participants found little or no impact on their practice, but most found that asking about pets had a positive impact. PHPs most frequently mentioned improvement in rapport or the therapeutic relationship, identification of an additional avenue to patient care, and improved understanding of the patient. Most found that pet-related discussions with patients had a positive impact on their relationship and improved provider-patient rapport/therapeutic alliance.

Table 1. Knowledge of Pets in Patients’ Families.

| Survey question                                                                 | Baseline | Final | P    |
|---------------------------------------------------------------------------------|----------|-------|------|
| What percentage of the families you care for live with pets?                     |          |       |      |
| I don’t know                                                                     | 53 56    | 24 26 | .0001|
| 0% of families                                                                   | 0 0      | 0 0   |      |
| In the past year (baseline)/ During your participation in this project (final), how often have you asked patients/clients about pets in their family? |          |       |      |
| I don’t know                                                                     | 12 13    | 4 4   |      |
| Never                                                                           | 16 17    | 3 3   | .0010|
| Routinely—new patients and at periodic health reviews                           | 8 9      | 21 22 |      |
| Routinely—all nonemergencies                                                     | 4 4      | 8 9   | .0002 (pooled) |

Note. Responses of those who completed the study (n = 94) at baseline, and on the final survey, using repeated-measures analyses.

Table 2. Impact of Asking About Pets.

| Survey question                                                                 | n %      | Pooled | n % |
|---------------------------------------------------------------------------------|----------|--------|-----|
| What impact (if any) does asking about your patients’ pets have on your practice? |          |        |     |
| Improved rapport/therapeutic alliance                                           | 17 18    | 66     |     |
| Provides additional avenue to care                                              | 14 15    |        |     |
| Better understanding of patient                                                 | 11 12    |        |     |
| Positive (unspecified)                                                           | 8 9      |        |     |
| Improved communication with patient                                             | 7 7      |        |     |
| Establishes common ground                                                       | 5 5      |        |     |
| Minimal/none                                                                     | 9 10     |        |     |
| Other                                                                            | 2 2      |        |     |
| No response                                                                      | 21 22    |        |     |
| What impact (if any) does asking about your patients’ pets have on your relationship with your patients? |          |        |     |
| Improved rapport/therapeutic alliance                                           | 22 23    | 71     |     |
| Positive (unspecified)                                                           | 21 22    |        |     |
| More open, smoother communication                                               | 9 10     |        |     |
| Patients appreciate the interest                                                | 8 9      |        |     |
| Establishes common ground                                                       | 4 4      |        |     |
| More insight into patient                                                        | 3 3      |        |     |
| Minimal/none                                                                     | 3 3      |        |     |
| Other                                                                            | 2 2      |        |     |
| No response                                                                      | 22 23    |        |     |

Note. Responses of those who completed the study (n = 94) on the final survey.
Asking about pets changed practice behavior (Table 4). Participants were significantly able to leverage all categories of zooeyia in practice: social capital ($P < .05$), physical exercise ($P < .05$), controlling unhealthy behaviors ($P < .05$), and the therapeutic benefits of pets ($P < .01$). Likewise, they were significantly able to mitigate 2 categories of zoonotic risk: infectious disease and injury ($P < .01$). There was no significant change in mitigation of the environmental impact of pets, nor in their potential challenge to family resources. Participants were asked about interprofessional collaboration with veterinarians. There was no significant change, although several commented that they now would consult a veterinarian as clinically appropriate.

**Table 3. Challenges to Asking About Pets.**

| Survey question                                      | n  | %  |
|-----------------------------------------------------|----|----|
| What challenges did you identify to asking about pets in patients’ families? |    |    |
| None                                                | 27 | 29 |
| Lack of time                                         | 20 | 21 |
| Not relevant to the appointment                      | 5  | 5  |
| Awkward (no lead-in, no opportunity)                | 3  | 3  |
| Difficult topic (related to finances)               | 3  | 3  |
| Remembering to ask                                   | 3  | 3  |
| Presence of children                                 | 3  | 3  |
| Grief of pet loss                                    | 2  | 2  |
| Other                                               | 5  | 5  |
| No response                                         | 23 | 24 |

Note. Responses of those who completed the study ($n = 94$) at baseline, and on the final survey, using repeated-measures analyses.

Asking about pets during patient interviews influenced both the quality of communication with patients and the available approaches to care. Asking about pets is a universally applicable, universally accepted, and boundary-appropriate way to open communication with patients. All participants had patients with pets, and all patients responded without objection. Asking about pets was relevant to all primary care practices, while not to all patients. It was inoffensive to those without pets and encouraged pet owners to talk about their daily lives. Asking about pets significantly increased providers’ knowledge of their patients and how they lived. Participants gained important understanding of patients’ physical activity, social capital, and housing. Remarkably, only 4 PHPs (4%) found that asking about pets revealed nothing about patients’ home life. Participants valued this increased understanding of patients. Thirty-one percent incorporated asking about pets as a matter of routine—a significant change in practice.

PHPs who currently owned pets were more likely to complete the study. Their familiarity with pets may have been a strong motivator. Pet-owning PHPs could effectively use pet-related discussions with patients as a boundary-appropriate way to share aspects of their own lives to no detrimental effect.

Two-thirds of participants reported that asking about pets had a positive impact on their practice and relationships with patients. The strongest effect was improved rapport/therapeutic alliance. This is foundational to primary care. Participants were able to leverage zooeyia in their care of patients. Fifteen percent of participants noted that asking about pets opened new avenues to care. The strongest change was in incorporating pets into treatment plans. Pets are an existing resource to PHPs. Evidence of the impact of pets on human health is well established, yet PHPs seldom avail themselves of opportunities to activate this family resource. Using activities with pets to complement medical therapy is readily accepted by patients; their animal companions are part of their everyday life.

**Discussion**

Asking about pets during patient interviews influenced both the quality of communication with patients and the available approaches to care. Asking about pets is a universally applicable, universally accepted, and boundary-appropriate way to open communication with patients. All participants had patients with pets, and all patients responded without objection. Asking about pets was relevant to all primary care practices, while not to all patients. It was inoffensive to those without pets and encouraged pet owners to talk about their daily lives. Asking about pets significantly increased providers’ knowledge of their patients and how they lived. Participants gained important understanding of patients’ physical activity, social capital, and housing. Remarkably, only 4 PHPs (4%) found that asking about pets revealed nothing about patients’ home life. Participants valued this increased understanding of patients. Thirty-one percent incorporated asking about pets as a matter of routine—a significant change in practice.

PHPs who currently owned pets were more likely to complete the study. Their familiarity with pets may have been a strong motivator. Pet-owning PHPs could effectively...

Discussions with patients about mitigating the risk of zoonotic disease and injury increased significantly. Physicians generally consider management of zoonotic risk a responsibility of public health services and veterinarians. After the educational intervention, many PHPs expressed increased confidence to work in this area. Dogs and cats were certainly the most popular pets in this study, which is consistent with national surveys. The higher than expected representation of horses may indicate participation of rural PHPs. Ownership of pocket pets, birds, and reptiles also exceeded published reports. This underlines the need for understanding how each species differs in their impact on owners’ health. There was no change in patient discussions regarding the environmental impact of pets. At the outset of the study, many PHPs were concerned about pets causing asthma. Recent research has revealed that early exposure to pets has a protective function against all allergic disease. Conversely, relatively few participants were aware of the importance of environmental contamination with intestinal parasite eggs, for example, and preventive steps to reduce exposure. For example, prevention for pets and their owners. During the baseline survey and educational interventions, PHPs often expressed discomfort with such topics.

The most frequently identified challenge to asking patients about pets is lack of time. People love to talk about their pets. Each practitioner must weigh the potential time pressure against the value of improved communication and rapport with the patient, as well as what clinically relevant information may be revealed in pet-centered discussions.

PHPs regularly refer to specialists when it is appropriate to patient care, yet interprofessional collaboration with veterinarians remains rare. There have long been calls for collaboration...
between PHPs and veterinarians. This is particularly important when patients are immunocompromised; veterinarians are seldom aware of such patient conditions. Veterinarians can provide prevention protocols for infectious diseases transmissible from pets. The global One Health initiative is dedicated to improving human, animal, and environmental health. Taking a more One Health approach at the community level would improve patient care. Several participants commented that they were now more comfortable with communicating with a patient’s veterinarian and would do so when clinically appropriate. This would require the patient’s permission.

**Limitations and Next Steps**

This study is limited by the sampling bias of participants’ self-selection which may not be representative of all PHPs. Forty-two percent of participants completed the study. Some attrition can be attributed to the 3- to 4-month length of the study. Budget restrictions of this pilot study prohibited gathering data on the patients’ perspectives of discussions about their pets with their health care providers. Patient input, and that of PHP-patient partnerships, is the next step in researching this communication approach.

**Conclusions**

This project is a first step to answer calls for balanced research investigating both the benefits and the risks of pet ownership to human health. These results are compelling, even though there was a time limitation to this study. In its span of 3 to 4 months, most PHPs would not have seen all their patients, yet those who engaged made significant changes to their practice and approaches to patient communication.

PHPs continually seek ways to connect with patients. Asking about pets in patients’ families is a patient-centered communication strategy which can address determinants of health, strengthen the therapeutic alliance, and open new avenues to care.

**Authors’ Note**

The views expressed in the submitted article are those of the authors and not an official position of their institutions.

**Acknowledgments**

The authors thank Primary Care Today for the generous donation of booth space at the 2015 symposium, graphic designer Linda van der Beek for her visual representation of evidence-based medicine, and biostatistician Steven V. Radecki for his analysis of the data.

**Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Funding**

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was generously supported by a grant (D15HA-040) from the Human-Animal Bond Research Initiative and the Morris Animal Foundation.

**References**

1. Naz A, Rosenberg E, Andersson N, Labonté R, Andermann A. Health workers who ask about social determinants of health are more likely to report helping patients: mixed-methods study. Can Fam Physician. 2016;62:e684-e693.

2. Hodgson K, Barton L, Darling M, Antao V, Kim FA, Monavvari A. Pets’ impact on your patients’ health: leveraging benefits and mitigating risk. J Am Board Fam Med. 2015;28(4):526-534.
3. American Pet Products Association. 2015/2016 Pet Industry Market Size and Ownership Statistics. Greenwich, CT. Date unknown. http://www.americanpetproducts.org/press_industrytrends.asp. Accessed September 15, 2017.

4. Reaser JK, Clark EE, Meyers NM. All creatures great and minute: a public policy primer for companion animal zoonoses. *Zoonoses Public Health*. 2008;55:385-401.

5. Walsh F. Human-animal bonds II: the role of pets in family systems and family therapy. *Fam Process*. 2009;48:481-499.

6. Staats S, Pierfelice L, Kim C, Crandall BA. A theoretical model for human health and the pet connection. *J Am Vet Med Assoc*. 1999;214(4):483-487.

7. Payne E, Bennett PC, McGreevy PD. Current perspectives on attachment and bonding in the dog–human dyad. *Psychol Res Behav Manag*. 2015;8:71-79.

8. Hodgson K, Darling M. Zooeeya: an essential component of “One Health.” *Can Vet J*. 2011;52:189-191.

9. Wood L, Martin K, Christian H, et al. The pet factor—companion animals as a conduit for getting to know people, friendship formation and social support. *PLoS One*. 2015;10(4):e0122085.

10. Kushner RF, Blatner DJ, Jewell DE, Rudloff K. The PPET study: people and pets exercising together. *Obesity*. 2006;14:1762-1770.

11. Raina P, Walther-Toews D, Bonnett B, Woodward C, Abernathy T. Influence of companion animals on the physical and psychological health of older people: an analysis of a one-year longitudinal study. *J Am Geriatr Soc*. 1999;47(3):323-329.

12. Milberger SM, Davis RM, Holm AL. Pet owners’ attitudes and behaviors related to smoking and second-hand smoke: a pilot study. *Toh Control*. 2009;18:156-158.

13. US Food & Drug Administration. FDA consumer update: secondhand (and third-hand) smoke may be making your pet sick; 2016. http://www.fda.gov/forconsumers/consumerupdates/ucm302220.htm. Accessed September 15, 2017.

14. Levine GN, Allen K, Braun LT, et al. Pet ownership and cardiovascular risk: a scientific statement from the American Heart Association. *Circulation*. 2013;127:2353-2363.

15. Wilson CC. The pet as an anxiolytic intervention. *J Nerv Ment Dis*. 1991;179(8):482-489.

16. Stull JW, Brophy J, Weese JS. Reducing the risk of pet-associated zoonotic infections. *CMAJ*. 2015;187:736-743.

17. Cherniak EP, Cherniak AR. Assessing the benefits and risks of owning a pet. *CMAJ*. 2015;187(10):715-716.

18. Survey Monkey. Ottawa, Ontario, Canada. https://www.surveymonkey.com/. Accessed September 15, 2017.

19. SAS Institute. SAS/Stat version 13.1 [software]. Cary, SC: SAS Institute. https://www.sas.com/en_ca/software/analytics/stat.html. Accessed September 15, 2017.

20. Hsieh H-F, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res*. 2005;15(9):1277-1288.

21. Babcock S, Marsh AE, Lin J, Scott J. Legal implications of zoonoses for clinical veterinarians. *J Am Vet Med Assoc*. 2008;233(10):1556-1562.

22. Dworak G, Gray GC, Kaplan B, eds. *Zoonoses: Protecting People and Their Pets*. Ames: The Center for Food Security and Public Health, College of Veterinary Medicine, Iowa State University; 2013.

23. Ownby DR, Johnson CC, Peterson EL. Exposure to dogs and cats in the first year of life and risk of allergic sensitization at 6 to 7 years of age. *JAMA*. 2002;288:963-972.

24. Fall T, Lundholm C, Oqvist AK, et al. Early exposure to dogs and farm animals and the risk of childhood asthma. *JAMA Pediatr*. 2015;169(11):e153219.

25. Epstein G, Bernstein DI, Levin L, et al. Opposing effects of cat and dog ownership and allergic sensitization on eczema in an atopic birth cohort. *J Pediatr*. 2011;158:265-271.e1-e5.

26. Centers for Disease Control and Prevention. Parasites—Toxocariasis (also known as roundworm infection). http://www.cdc.gov/parasites/toxocariasis/index.html. Published 2013. Accessed September 15, 2017.

27. Murray WJ, Kazacos KR. Raccoon roundworm encephalitis. *Clin Infect Dis*. 2004;39:1484-1492.

28. Beveridge WIB. The need for closer collaboration between the medical and veterinary professions. *B World Health Organ*. 1978;56(6):849-858.

29. Damborg P, Broens EM, Chomel BB, et al. Bacterial zoonoses transmitted by household pets: state-of-the-art and future perspectives for targeted research and policy action. *J Comp Pathol*. 2016;155(1)(suppl 1):S27-S40.

30. Grant S, Olsen CW. Preventing zoonotic diseases in immunocompromised persons: the role of physicians and veterinarians. *Emerg Infect Dis*. 1999;5(1):159-163.

31. US Department of Health & Human Services. *Summary of the HIPAA Privacy Rule*. http://www.hhs.gov/sites/default/files/privacysummary.pdf. Published 2005. Accessed September 15, 2017.