Veterinarian-client-patient communication patterns used during clinical appointments in companion animal practice

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Objective—To identify communication patterns used by veterinarians during clinical appointments in companion animal practice.

Design—Cross-sectional descriptive study.

Sample Population—A random sample of 50 companion animal practitioners in southern Ontario and a convenience sample of 300 clients and their pets.

Procedure—For each practitioner, 6 clinical appointments (3 wellness appointments and 3 appointments related to a health problem) were videotaped. The Roter interaction analysis system was used to analyze the resulting 300 videotapes, and cluster analysis was used to identify veterinarian communication patterns.

Results—175 (58%) appointments were classified as having a biomedical communication pattern, and 125 (42%) were classified as having a biolifestyle-social communication pattern. None were classified as having a consumerist communication pattern. Twenty-three (46%) veterinarians were classified as using a predominantly biomedical communication pattern, 19 (38%) were classified as using a mixed communication pattern, and 8 (16%) were classified as using a predominantly biolifestyle-social communication pattern. Pattern use was related to the type of appointment. Overall, 103 (69%) wellness appointments were classified as biolifestyle-social and 127 (85%) problem appointments were classified as biomedical. Appointments with a biolifestyle-social communication pattern (mean, 11.98 minutes) were significantly longer than appointments with a biomedical communication pattern (10.43 minutes). Median relationship-centered care score (ie, the ratio of client-centered talk to veterinarian-centered talk) was significantly higher during appointments with a biolifestyle-social communication pattern (1.10) than during appointments with a biomedical communication pattern (0.40).

Conclusions andClinical Relevance—Results suggest that veterinarians in companion animal practice use 2 distinct patterns of communication. Communication pattern was associated with duration of visit, type of appointment, and relationship-centeredness. Recognition of these communication patterns has implications for veterinary training and client and patient outcomes.

RIAS  Roter interaction analysis system

Theoretical models of the physician-patient relationship have been used by medical researchers and educators to help understand the roles that physicians and patients play during medical encounters and the impact those roles have on the outcomes of medical care. A particularly useful set of theoretical models that was developed in 1992 reflects the balance of power between physician and patient in regard to 3 criteria: who sets the agenda for the appointment (ie, the physician, the physician and patient in negotiation, or the patient), the importance placed on the patient’s values (ie, the physician assumes that the patient’s values are the same as the physician’s, the physician explores the patient’s values with the patient, or the physician does not explore the patient’s values), and the functional role of the physician (ie, guardian, advisor, or consultant).

On the basis of these criteria, 3 models of the physician-patient relationship have been described. At one end of the relationship spectrum lies paternalism, characterized as a relationship in which the physician sets the agenda for the appointment, the physician assumes that the patient’s values are the same as the physician’s, and the physician takes on the role of a guardian. At the opposite end of the spectrum lies consumerism, which is characterized by a reversal of the traditional power relationship between physician and patient: the patient sets the agenda for the appointment; the physician does not explore the patient’s values; and the physician plays the role of a technical consultant, providing information and services on the basis of the patient’s demands. The paternalism model has been criticized for ignoring the patient’s perspective, but the consumerism model errs in limiting the role of the physician.

Between these 2 extremes is the relationship-centered model, which represents a balance of power between physician and patient and is based on mutuality. In the relationship-centered model, the relationship between physician and patient is characterized by negotiation between partners, resulting in creation of a joint venture, with the physician taking on the role of...
The present study represents a part of a larger, descriptive, cross-sectional study of veterinarian-client-patient communication that occurs during clinical appointments in companion animal practice. A detailed description of veterinarian-client-patient communication obtained by means of interaction analysis of videotapes of clinical appointments has been published. In the present study, communication variables generated from this previous analysis were used to
determine whether veterinarians use broad patterns of communication during actual veterinary medical appointments.

**Materials and Methods**

Details of the study design, including the sampling strategy and data collection techniques, have been described. Briefly, a random sample of 50 veterinarians was recruited from the population of companion animal practitioners in southern Ontario. Participants were contacted by one of the authors (JRS) to inform them of the project, obtain consent, and arrange a visit. All clients who visited the practice during this individual's visit were invited to participate in the study. Fifty veterinarians and 300 veterinary medical appointments were videotaped. For each veterinarian, at least 6 medical appointments were videotaped, including 3 appointments identified as wellness appointments and 3 appointments having to do with a health problem (ie, problem appointments). A wellness appointment was defined as a veterinary encounter with a presumably healthy juvenile, adult, or geriatric dog, cat, or small mammal. A problem appointment was defined as a veterinary encounter with a dog, cat, or small mammal experiencing a health-related problem. When more than 6 appointments were videotaped, the appointments that best represented the variety of appointments throughout the day were selected for analysis.

A brief survey was administered to veterinarians and clients to obtain information on demographic traits of participating practices, veterinarians, clients, and pets. The Human Ethics Committee at the University of Guelph approved the research protocol.

**Demographic data**—Practice data that were collected included the number of veterinarians in the practice, mean duration of medical appointments, practice type (ie, exclusively small animal or mixed-animal practice), and practice location (ie, rural, suburban, or urban). Data regarding participating veterinarians that were obtained included age, years of clinical experience, gender, ethnicity, and previous communication skills training. Data obtained regarding participating clients included familiarity with the veterinarian, number of visits per year to the veterinarian, age, gender, educational background, and household income. Clients were also asked to report the number of pets in the household as well as the species, breed, sex, and age of their pet.

**Data analysis**—Videotapes of the 300 medical appointments were submitted to the laboratory of Dr. Debra Roter in the Department of Health Policy and Management at the Johns Hopkins School of Public Health for analysis with the RIAS. Trained coders analyzed each videotape and assigned each full thought expressed during the appointment by the veterinarian or client to mutually exclusive and exhaustive categories that reflect communication function and content, which were then classified as biomedical, lifestyle-social, or psychosocial talk. The term biomedical was used for biomedical topics, and information-giving related to lifestyle-social topics, and clusters were identified on the basis of frequency distributions of these 4 communication variables. Following identification of clusters, discriminant analysis was used to validate the designation of these clusters. Standard software was used for hierarchical cluster analysis and discriminant analysis.

After communication patterns for the 300 medical appointments were identified, each participating veterinarian was then classified as using a predominantly biomedical communication pattern, mixed communication pattern, or predominantly biolifestyle-social communication pattern on the basis of distribution of the communication patterns identified during the 6 appointments. A veterinarian was classified as using a predominantly biomedical communication pattern or predominantly biolifestyle-social communication pattern if that pattern was identified during at least 4 of the 6 videotaped appointments. A veterinarian was classified as using a mixed communication pattern if a biomedical communication pattern was used during 3 appointments and a biolifestyle-social communication pattern was used during the other 3 appointments.

A second classification scheme was developed to describe predominant communication pattern use by veterinarians within each type of appointment. For wellness appointments, a veterinarian was classified as using a biolifestyle-social communication pattern if that pattern was identified in all 3 appointments. For problem appointments, a veterinarian was classified as using a biomedical communication pattern if that pattern was identified in all 3 appointments. A veterinarian was classified as using a mixed communication pattern for all other combinations of communication patterns.

**Measurements of communication dynamics**—Two measures of communication dynamics—the verbal dominance score and the relationship-centered care score—were used to describe communication control (ie, the power relationship between the veterinarian and the client) within communication patterns. The verbal dominance score was calculated to assess the balance of the dialogue between the veterinarian and client and was calculated as the total count of veterinarian statements divided by the total count of client statements. A score of 1 indicated that the dialogue was equally shared, whereas a score < 1 indicated that the client dominated the discussion and a score > 1 indicated that the veterinarian dominated the discussion.

The relationship-centered care score was calculated as a reflection of the balance of the veterinarian-client dialogue within the 4 tasks of the medical appointment (ie, data gathering, client education and counseling, relationship building, and activation and partnership). The formula for calculating this score has been described previously. Briefly, the relationship-centered score represents the ratio of client-centered talk to veterinarian-centered talk. Client-centered talk was defined as the sum of the following communication compos-
ites: veterinarian questions and client education and counseling regarding lifestyle-social topics; veterinarian partnership and rapport building; and client questions, including biomedical and lifestyle-social topics. Veterinarian-centered talk was defined as the sum of the following communication composites: veterinarian biomedical data gathering and information giving, veterinarian orientation (ie, indicators of what is about to happen), and client biomedical information giving. By definition, appointments with high relationship-centered care scores were characterized by veterinarian conversations including a broad focus, including lifestyle-social topics; time spent building rapport and establishing a partnership with the client; and encouragement of client questions.

Verbal dominance and relationship-centered care scores were rank ordered from lowest to highest and divided into 3 tertiles (ie, low, moderate, and high scores), with the 33rd and 66th percentiles used as cutoff points.

**Statistical analysis**—The dataset was hierarchical and divided into 2 levels: veterinarian (n = 50) and appointment (300). Therefore, veterinarian-level and appointment-level statistical analyses were performed.

For veterinarian-level analyses, we were interested in the relationship between communication pattern (ie, primarily biomedical, mixed, and primarily biolifestyle-social) and practice and veterinarian demographic variables. For continuous response variables, ANOVA was used to test for differences among means, and for frequency data, χ² tests were used to test for associations.

For appointment-level analyses, we were interested in the relationship between communication pattern (ie, biomedical or biolifestyle-social) and client and pet demographic variables. Descriptive statistics (ie, mean, SD, and range) were calculated for verbal dominance and relationship-centered care scores. Within each communication pattern, ANOVA was used to test for differences among the communication variables used in the cluster analysis (question-asking regarding biomedical topics, question-asking regarding lifestyle-social topics, information-giving related to biomedical topics, and information-giving related to lifestyle-social topics). Student t tests were used to test for differences between mean values for continuous variables, and χ² tests were used to test for associations.

To address the multilevel structure of the data, generalized linear mixed models were used. In this stage of the analysis, we were interested in identifying predictor variables that would determine the probability that the biomedical communication pattern would be used. Univariate analysis and backward elimination were used to build more complex models. Random-effect terms were removed if the P value was > 0.20, whereas fixed-effect terms were removed if the P value was > 0.05. Standard software was used.

**Results**

**Demographic data**—The 50 veterinarians who participated in the study were employed in 48 veterinary practices. Twenty-six of the 48 (54%) practices were located in suburban regions, 12 (29%) were located in rural regions, and 10 (21%) were located in urban regions. Forty-one of the 48 practices (89%) were classified as exclusively small animal practices, and 7 (15%) were classified as mixed-animal practices. Twenty-nine of the 300 appointments (9%) were scheduled appointments every 30 minutes. Of the 48 practices, 11 (23%) consisted of a single veterinarian, 18 (37%) consisted of 2 veterinarians, and 19 (40%) consisted of 3 veterinarians.

Mean age of the 50 veterinarians who participated in the study was 41 years (range, 26 to 68 years). Mean number of years of clinical experience was 14 years (range, 1 to 43 years). Twenty-four (48%) were female, and 26 (52%) were male. Forty-three (86%) were Caucasian. Fifteen (30%) indicated that they had previous communication skills training, but responses to this question varied widely, resulting in an ill-defined variable. Previous communication skills training encompassed a range of continuing education experiences, including formal conference lectures series, courses devoted to specific topics (eg, conflict resolution, leadership, empowered listening, or parenting), self-directed reading of journals or books or listening to audiotapes, and learning through trial and error on the job. The reported number of hours spent in communication skills training ranged from 5 to 100 hours.

Of the 300 clients who participated in the study, 231 (77%) were female. Mean age of participating clients was 43 years (range, 14 to 86 years). Information on education background was provided by 280 clients. Of these, 43 (16%) had less than a 12th-grade education. Seventy-one (25%) had graduated from high school, 110 (39%) had graduated from college, and 54 (19%) had postgraduate education. Information on yearly household income was provided by 247 clients. Of these, 36 (15%) had a yearly household income < $30,000, 71 (29%) had a yearly household income between $30,000 and $50,000, 53 (21%) had a yearly household income between $50,000 and $75,000, and 87 (35%) had a yearly household income > $75,000. Two hundred sixty-one (87%) clients brought a single pet to the veterinarian. Mean number of years that clients knew their veterinarian was 4.5 years (range, 0 to 30 years); 45 (15%) of the appointments were initial appointments with the veterinarian. Median number of visits to the veterinarian per year, as reported by participating clients, was 2.0 (mean, 3.5; range, 1 to 75). During 105 (35%) appointments, multiple clients were present. Fifty-five of the 105 (52%) appointments during which multiple clients were present involved 2 adults and the remaining 50 (48%) included 1 or both parents with 1 or more children.

Of the 399 pets included in the study for which information was gathered, 85 (21%) were guinea pigs, 2 rabbits, and a rat. Two hundred and forty-five (58%) of the pets were dogs, 158 (41%) were cats, and 5 (1%) were small mammals (ie, a ferret, a guinea pig, 2 rabbits, and a rat).

**Vaccination communication patterns**—Cluster analysis of veterinarian-client communication revealed that 2 communication patterns—biomedical and biolifestyle-social—were used, and discriminant analysis confirmed that 94% of communications patterns were correctly classified. Overall, 175 (58%) appointments were classified as having a biomedical communication pattern, and 125 (42%) were classified as having a biolifestyle-social communication pattern. None of the appointments were classified as having a consumerist communication pattern.

Individual veterinarians were not consistent in their use of a particular communication pattern. All 50
Veterinarians used the biomedical communication pattern during at least 1 appointment, and 47 (94%) used the biolifestyle-social communication pattern during at least 1 appointment. Only 3 (6%) veterinarians used the biomedical communication pattern during all 6 videotaped appointments, and none of the veterinarians used the biolifestyle-social communication pattern during all 6 videotaped appointments. Twenty-three (46%) veterinarians were classified as using a predominantly biomedical communication pattern (ie, use of the biomedical communication pattern during at least 4 of 6 appointments), 19 (38%) were classified as using a mixed communication pattern (ie, use of the biomedical communication pattern during 3 appointments and the biolifestyle-social communication pattern during the other 3), and 8 (16%) were classified as using a predominantly biolifestyle-social communication pattern (ie, use of the biolifestyle-social communication pattern in at least 4 of 6 appointments).

As expected on the basis of results of the cluster analysis, communication content differed significantly between communication patterns. Within the biomedical pattern, 80% of veterinarian and 92% of client questioning and 92% of veterinarian and 74% of client information-giving was biomedical in nature. Within the biolifestyle-social pattern, 48% of veterinarian and 23% of client questioning and 29% of veterinarian and 60% of client information-giving was biolifestyle-social in nature.

**Communication dynamics**—Mean duration of appointments with a biomedical communication pattern (11.98 minutes) was significantly (P = 0.02) longer than mean duration of appointments with a biolifestyle-social communication pattern (10.43 minutes). Mean verbal dominance score (ie, the ratio of total veterinarian statements to total client statements) was 1.80 for both communication patterns. However, median relationship-centered care score (ie, the ratio of client-centered talk to veterinarian-centered talk) during appointments with a biolifestyle-social communication pattern (1.10) was significantly (P < 0.01) higher than median score during appointments with a biomedical communication pattern (0.40).

**Comparison of wellness versus problem appointments**—Of the 150 wellness appointments, 103 (69%) involved biolifestyle-social communication patterns and 47 (31%) involved biomedical communication patterns. In contrast, of the 150 problem appointments, 128 (85%) involved biomedical communication patterns and only 22 (15%) involved biolifestyle-social communication patterns. The distribution of communication patterns was significantly (P < 0.01) different between wellness and problem appointments.

Individual veterinarians were more consistent in pattern use in relation to type of appointment. Within wellness appointments, 19 veterinarians (38%) were classified as using a predominantly biolifestyle-social communication pattern, while 31 (62%) were classified as using a mixed communication pattern. Within problem appointments, 32 (64%) veterinarians were classified as using a biomedical communication pattern and 18 (36%) were classified as using a mixed communication pattern.

The proportion of wellness appointments with high (ie, within the highest tertile) relationship-centered care scores (86/150 [57%]) was significantly (P < 0.01) higher than the proportion of problem appointments with high relationship-centered care scores (16/150 [11%]). Distribution of verbal dominance scores among tertiles did not differ significantly between wellness and problem appointments.

**Association between demographic variables and communication patterns**—In general, few practice, veterinarian, client, or pet demographic factors were significantly associated with communication pattern. Gender of the veterinarian and client was strongly associated with communication pattern used during wellness appointments. When the veterinarian and client were of the same gender, the proportion of wellness appointments in which a biomedical communication pattern was used was low (ie, 20/150 [13%]) wellness appointments involving a male veterinarian and male client consisted of a biomedical communication pattern, and 27/150 [18%] wellness appointments involving a female veterinarian and female client consisted of a biomedical communication pattern. In contrast, when the veterinarian and client were of opposite genders, the proportion of wellness appointments in which a biomedical communication pattern was used was more moderate (ie, 63/150 [42%]) wellness appointments involving a male veterinarian and female client consisted of a biomedical communication pattern, and 99/150 [66%] wellness appointments involving a female veterinarian and male client consisted of a biomedical communication pattern.

Whether the veterinarian had previous communication skills training was significantly (P = 0.05) associated with communication pattern. Eleven of the 23 (48%) veterinarians classified as using a predominantly biomedical communication pattern reported having previously received communication skills training, compared with 3 of 19 (16%) veterinarians classified as using a mixed communication pattern and 1 of 8 (13%) veterinarians classified as using a predominantly biolifestyle-social communication pattern.

**Discussion**

Results of the present study suggest that 2 communication patterns—biomedical and biolifestyle-social—are routinely used during clinical appointments in companion animal practice, with the biomedical pattern used in 58% of appointments and the biolifestyle-social pattern used in 42%. This distribution of communication patterns was similar to that found in a previous study of primary care physicians, in which 65% of medical appointments were classified as reflecting a predominantly biomedical communication pattern, 28% were classified as reflecting a psychosocial com-
communication pattern, and 8% were classified as reflecting a consumerist communication pattern.

None of the appointments in the present study reflected a consumerist pattern of communication. The consumerist communication pattern is characterized by a high number of patient questions and a low number of physician questions and little psychosocial or social exchange between physician and patient. Within this pattern, the physician functions as a technical expert, providing factual information. There are several possible reasons why a consumerist pattern was not evident during any of the veterinary appointments included in the present study. First, it is possible that consumerist communication patterns do exist in veterinary clinical practice but are rare. Thus, consumerist communication patterns may have been identified if we had used a larger sample of veterinary appointments. Second, veterinarians appeared to be verbally dominant throughout all of the appointments that were videotaped, independent of the communication pattern that was used. Previous analysis of these appointments indicated that, on average, clients asked only 5 questions/appointment. Thus, veterinarians may not have provided time for client questions or input, and this may have prevented clients from assuming a high-power position. Third, patients may feel more empowered to be advocates for their own healthcare, compared with clients acting as advocates for their pet’s healthcare. Fourth, and least likely, depending on their educational background and animal experience, clients may not know what questions to ask.

Roter et al reported that during medical appointments with a biomedical communication pattern, patients had less communication control and provided less input than during appointments with more participatory models of communication (ie, psychosocial and consumerist communication patterns). In addition, they found that verbal dominance differed with communication pattern. Thus, mean physician verbal dominance score was 1.37 during appointments with a biomedical communication pattern and 1.29 during appointments with a biolifestyle-social pattern. In contrast, mean veterinarian verbal dominance score in the present study was 1.80, regardless of communication pattern. Thus, veterinarians were dominating most of the conversation during videotaped veterinary medical appointments.

Median relationship-centered care score in the present study was significantly higher for appointments with a biolifestyle-social communication pattern (1.10) than during appointments with a biomedical communication pattern (0.40). This suggests that the empirical communication patterns identified in the present study (biomedical and biolifestyle-social) reflect the theoretical models proposed for physician-patient relationships. The biomedical communication pattern appears to have reflected the paternalistic model, in that the exchange was predominantly biomedical and the veterinarian directed the client. The biolifestyle-social communication pattern appears to have reflected the relationship-centered model, in that lifestyle-social topics were included in the discussion, the veterinarian spent time building rapport and establishing a partnership with the client, and the veterinarian encouraged client questions and participation in the visit. This may have important implications for veterinary care, in that previous studies in human medicine have reported a positive relationship between aspects of relationship-centered medical care and important clinical outcomes, including patient satisfaction, physician satisfaction, patient health outcomes, and a reduction in malpractice complaints. Thus, predominant use of a biomedical communication pattern, reflecting a paternalistic model for the veterinarian-client relationship, may have negative implications for attaining desired veterinarian, client, and pet outcomes.

An important finding of the present study was that appointments during which the biomedical communication pattern was used were actually, on average, 1.5 minutes longer than appointments during which the biolifestyle-social communication pattern was used. It has been thought that use of a relationship-centered care approach would take more time, as additional time would be required to elicit the full spectrum of the client’s concerns, establish rapport, and involve the client in decision-making. However, studies in human medicine have found that use of appropriate communication skills improved accuracy and efficiency of data gathering and enhanced recall and adherence to recommendations, resulting in an overall time savings. As was the case in a previous study of primary care physicians, most veterinarians in the present study used > 1 communication pattern. However, most (62%) used 1 communication pattern more often than the other, with 46% of veterinarians classified as using a predominantly biomedical communication pattern.

It was not surprising that the biomedical communication pattern was used more frequently than the biolifestyle-social pattern in the present study. The biomedical pattern has traditionally been the predominant communication pattern in human medicine and the same appears to be true for veterinary medicine. Although relationship-centered care is generally considered to be the optimal approach in human medicine, it is recognized that different models may be appropriate under different clinical circumstances. For instance, the paternalistic model (biomedical communication pattern) may be the most appropriate model during an emergency situation, when timely action must be taken. Similarly, some elderly patients may feel more comfortable with a paternalistic model, since that model has traditionally framed the medical interview. It is unknown whether veterinarians in the present study were consciously tailoring their communication style on the basis of various aspects of the individual clients, but flexibility is key to the success of communication pattern use. We hypothesize that taking time early during a veterinary medical appointment to determine client preferences, then adapting the communication pattern to that preferred by the client, will increase the likelihood of establishing and maintaining a strong veterinarian-client relationship.

In the present study, we found that communication pattern was significantly associated with appointment type. Sixty-nine percent of wellness appointments were
classified as involving the biolifestyle-social communication pattern, whereas only 15% of problem appointments were classified as involving this pattern. This suggests that veterinarians took more time to learn about the client and pet and to build rapport during wellness appointments. One reason for the difference in communication patterns between appointment types may be that wellness appointments are typically routine in nature, whereas problem appointments can be complex and challenging. In addition, increased client anxiety or stress during problem appointments may have an impact on the veterinarian-client-patient interaction.

A detailed comparison of veterinarian-client-patient communication during wellness versus problem appointments is required.

It was surprising to find few strong associations between communication pattern and veterinarian, client, and pet demographic characteristics. Because the greatest source of variability in communication pattern use was within veterinarian, we anticipated that client and pet characteristics may have been contributing to communication pattern use by veterinarians. Given that this is the first analytic study of veterinarian-client-patient communication and the complexity of such interactions, further quantitative and qualitative strategies may aid in identification of veterinarian, client, and pet characteristics associated with particular communication patterns.

It is of interest to consider several practice characteristics that were not determinants of veterinarian communication pattern use in the present study. For instance, one of our initial hypotheses was that the pattern of veterinarian-client-patient communication might differ between interactions with new clients versus long-standing clients. Fifteen percent of the appointments in this study were first appointments with the veterinarian. According to Ontario Veterinary Medical Association data, in the province of Ontario, approximately 22% of clients in exclusively small animal practice are new clients in any given year. Therefore, there were slightly more repeat appointments in the present study sample than is typical for this region. Nevertheless, there was no difference in the distribution of initial versus repeat appointments within each communication pattern type, and familiarity with the veterinarian was not identified as being significantly associated with veterinarian communication pattern use.

Another of our initial hypotheses was that cultural differences in single- versus multidoctor practices might result in variations in communication patterns. Most practices in the present study were multidoctor practices, and according to data from the Ontario Veterinary Medical Association, mean number of veterinarians per practice in the province of Ontario is 1.8. However, no difference in veterinarian communication pattern use was found between single- and multidoctor practices in the present study.

Gender of the veterinarian and client was strongly associated with communication pattern during wellness appointments in the present study, with communication pattern associated with whether the veterinarian and client were of the same or opposite genders. Roter et al also reported gender differences in communication pattern use among primary care physicians, but they found that only physician gender was associated with communication pattern used, with male physicians more likely to use a biomedical communication pattern and female physicians were more likely to use other communication patterns. Our initial findings need to be interpreted with caution, and additional stepwise and multilevel analysis is required to develop a more in-depth understanding of how gender differences might affect veterinarian-client-patient communication.

A previous history of communication skills training was significantly associated with communication pattern use in the present study, with veterinarians who reported having attended a communication skills training course in the past more likely to use a biomedical communication pattern. This finding needs to be interpreted with caution for 2 reasons. First, only 13 (30%) veterinarians reported having taken a communication course previously, meaning the sample size was small. Second, reported communication skills training courses were highly variable in duration, content, and quality. In addition, most of the reported courses were didactic in nature, with the primary focus being practice management, not specifically communication skills training. It is possible that these training experiences raised the awareness of practitioners, but the training generally was not skills-based nor was it the type of experiential training required to affect a change in behavior. When teaching communication skills, experiential learning techniques have been favored over traditional didactic lectures, and the use of small groups and videotaped or live patients or role-playing actors, together with observation and constructive feedback, has been shown to be far more successful than didactic teaching in terms of improving skill performance. In the future, greater exposure to experiential techniques and opportunities for veterinarians may positively affect communication behavior, leading to higher levels of relationship-centered care.

In a previous study, Roter et al identified several physician and patient characteristics that were related to communication pattern use by primary care physicians. A biomedical communication pattern was more likely to be used with older (64 vs 57 years; P = 0.003) and lower income (P = 0.04) patients. In addition, a biomedical communication pattern was more likely to be used by young (34 vs 37 years; P = 0.009) male (P = 0.05) physicians. The strongest contributing factors were physician and patient age. In the present study, by contrast, neither veterinarian age nor clinical experience was significantly associated with communication pattern use. Client age and number of visits per year were significantly associated with communication pattern use in univariate analyses; however, they were not found to be significant in the multivariate analysis.

Limitations of the present study design, including sampling technique and the use of a quantitative approach to measure communication, have been discussed previously. One particular limitation of the present study was that only 6 appointments were videotaped for each veterinarian. In the present study, we found that the greatest source of variation in com-
Communication pattern use was within veterinarian. Thus, in future studies, sampling and data collection techniques should incorporate a larger number of visits per veterinarian.

Another limitation of the present study was the interdependence of communication measures, in that several of the variables we examined shared common elements. In particular, the communication patterns and the relationship-centered care scores had communication composites in common. Despite these shared components, however, these variables seemed to behave independently of each other.

The third limitation of the present study related to the regression analysis. Initial findings based on univariate and multivariate analyses are reported in the present study. Given the complexity of veterinarian-client-patient interactions, further quantitative and qualitative strategies may aid in identification of veterinarian, client, and pet characteristics associated with these communication patterns.

Finally, the present study focused solely on veterinarian-client-patient interactions in the examination room. It is recognized that clinical staff interactions with the client and pet and the clinic environment itself will influence a client’s overall satisfaction with a visit to the veterinarian.

In conclusion, the findings of this study suggest that veterinarians use 2 distinct patterns of communication and that pattern use was associated with the duration of the visit, type of appointment, and relationship-centeredness. Communication pattern use has implications for veterinarian, client, and patient outcomes based on research on physician-patient communication

References

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