

Effects of preadoption counseling for owners on house-training success among dogs acquired from shelters

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Objective—To determine the effect of preadoption counseling for owners on house-training success among dogs acquired from shelters.

Design—Prospective study.

Sample Population—113 dog owners.

Procedures—Participants were randomly assigned to a treatment (n = 54) or a control (59) group. Dog owners in the treatment group received counseling (5 minutes' duration) regarding house-training. Owners in the control group did not receive counseling, but all other adoption procedures were otherwise identical to those applied to the treatment group. All participants were contacted by telephone 1 month after adoption of a dog for assessment of house-training status and related issues by use of a standardized survey method; data were compared between groups.

Results—Most shelter dogs were considered successfully house-trained by their owners 1 month after adoption. Furthermore, dogs were considered house-trained by significantly more owners who received preadoption counseling than control group owners (98.1% vs 86.4%). Owners who received counseling used verbal punishment on their dogs during house-training less frequently and applied enzymatic cleaners to urine- or feces-soiled areas more frequently than owners in the control group.

Conclusions and Clinical Relevance—Results have suggested that brief preadoption counseling for owners enhances successful house-training of dogs adopted from shelters. Counseling owners at the time of pet acquisition may thus have beneficial effects in the prevention of inappropriate elimination behaviors. Veterinarians and animal care staff should be encouraged to devote time to counsel new pet owners on successful house-training, as well as other healthcare and behavioral needs. (*J Am Vet Med Assoc* 2007;231:558–562)

Behavior problems are the primary reason for dog relinquishment and, ultimately, the cause of death for most of the 2 million dogs that are euthanized annually in shelters.¹⁻³ Common behavior problems in adult dogs relinquished to shelters include aggression, inappropriate elimination, destructive behavior, and excessive activity.^{3,4} Dogs with elimination problems, such as urinating and defecating in the house, are at an increased risk for relinquishment to animal shelters.⁴⁻⁶ In 1 study,³ house-soiling was the most frequently reported behavioral reason for relinquishment of dogs. Considering the risk of relinquishment associated with house-soiling in the pet dog population, veterinarians and shelter staff have a critical role in advising and educating owners on how to successfully house-train their pets. It is hypothesized that similar to many medical problems, behavior problems are best treated with prevention.⁷ Preventive counseling at or before pet

acquisition could help prevent house-soiling, thereby reducing pet relinquishment as well as loss of revenue for veterinary practitioners. The purpose of the study reported here was to determine the effect of preadoption counseling for owners on house-training success among dogs acquired from shelters. Our hypothesis was that preadoption counseling of owners would increase the success of house-training among dogs in their new homes, compared with findings among dogs newly adopted by owners who did not receive counseling.

Materials and Methods

Enrollment—Participants were recruited in January through April 2006 from the Franklin County Dog Shelter.^a This municipal shelter had primary responsibility for control of stray dogs and enforcement of laws regarding stray dogs in Franklin County, Ohio, during that period. It also offered open admission for owner-released dogs and impounded 13,095 dogs in 2005.^{8,b}

On adoption, new owners of dogs (≥ 6 months old) were asked by trained adoption clerks to participate in a voluntary follow-up study conducted by The Ohio State University College of Veterinary Medicine. They were informed that a follow-up telephone interview (approx 5 minutes' duration) would be conducted at 1 month after adoption. As an incentive for participation,

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new owners were offered a free gift immediately on enrollment. Signed consent and contact information were obtained from the adoptive owners.

To avoid confounding effects of previous house-training in a foster home, only dogs that had never been in foster care were included in the study. Because puppies eliminate more frequently than adult dogs and may require as long as 8 weeks to become completely house-trained,⁹ dogs < 6 months old were not included in the study. Because the histories of most shelter dogs are unknown, ages reported by owners for the study were based on approximations assigned by shelter staff veterinarians. According to routine practice at this shelter, all male dogs underwent castration and all female dogs underwent ovariohysterectomy before adoption.

Group assignment—To avoid imbalance in the number of participants in each group, blocked randomization with a block size of 20 was used.¹⁰ Randomization for group assignment was performed by use of a computerized random number generator. The shelter's adoption forms were then arranged in that specific order for adoption clerks to use. Enrollment forms were color-coded for assignment into either counseled (treatment) or noncounseled (control) groups.

Following random selection, participants assigned to the treatment group received a 5-minute preadoption counseling session regarding house-training of dogs, whereas the control group participants received no such counseling. The adoption counselor explained the likelihood that a shelter dog would not already be house-trained and offered owners in the treatment group advice on how to best house-train their pet. House-training information and recommendations were based on existing veterinary medical literature.^{9,11-19} Recommendations included feeding meals at scheduled times (rather than *ad libitum*) to better predict defecation shortly after eating, providing frequent opportunities for the pet to practice supervised outdoor elimination, and accompanying the dog to a designated toilet area to provide positive reinforcement (food rewards and praise) each time the pet urinated or defecated outside. The use of verbal or physical punishment of elimination indoors was strongly discouraged to prevent any dog developing a fear of the owner and reluctance to eliminate in the owner's presence. To prevent house-soiling when owners were not at home, crate-training instruction was provided. Owners were also taught the so-called umbilical cord method¹⁷ of keeping their dog close to them on a leash in the house while they were home to prevent elimination accidents. This method was recommended for dogs, particularly small breeds, that eliminated indoors frequently. Finally, the adoption counselor discussed the use of enzymatic cleaners for soiled areas in the house. All new owners in both study groups received an adoption packet that included a handout on house-training of dogs, which was provided as part of the routine protocol for this shelter. No interview questions were asked of owners at the time of adoption.

Telephone survey—Each owner was contacted 1 month after adoption of a dog and was questioned by use of a telephone survey instrument.^c The interviewer was unaware of the owner's group assignment, and a

standardized survey method²⁰ was used. If the telephone was not answered, a message regarding the study with a return telephone number was left on an answering machine, when available. Ten contact attempts were made before owners were considered to be non-responders. All data were tracked by use of a standard database package.^d The survey was granted exemption status by The Ohio State University Institutional Review Board.

During the interview at 1 month after adoption, owners were asked 3 main questions. The first question required owners to report the frequency of house-soiling events by their dog based on their recollection of the previous month as never, 1 or 2 times per month, weekly, or daily. The responses never and 1 or 2 times per month were collapsed into a category of rare house-soiling; the responses weekly and daily were collapsed into a category of frequent house-soiling. Responses were then solicited regarding house-training status immediately following adoption (baseline assessment) and at the present time (ie, 1 month after adoption). Owners were asked to select the appropriate description for both the baseline assessment and the current house-training status from 4 options: completely housebroken, mostly housebroken, somewhat housebroken, and not at all housebroken. For statistical analysis, the responses completely housebroken and mostly housebroken were collapsed into a house-trained category; the responses somewhat housebroken and not at all housebroken were collapsed into a not house-trained category. Owners were also asked whether they had expected their dog to be house-trained at the time of adoption and whether a lack of previous house-training would have led them to relinquish or re-home their dog.

Additional questions were also asked regarding urinary tract and gastrointestinal tract health, environment (indoor vs outdoor), and the disposition of the dog. Dogs were removed from the study if they were housed exclusively outdoors, had received a diagnosis of clinical urinary tract or gastrointestinal tract disease, or were no longer living with the initial adoptive owner. To determine whether adoption counseling had any effect on the owners' house-training methods, the survey included enquiries about specific techniques used by the owners, such as verbal praise, food rewards, verbal and physical punishment, feeding practices, and cleaning methods following house-soiling accidents.

Statistical analysis—By use of a χ^2 test, comparisons were made between treatment and control groups for the subjective and objective measurements of house-training success. Comparisons were also made between groups receiving or not receiving counseling based on whether or not they used the various house-training recommendations made. The Fisher exact test was used for categorical variables when the expected value of a given cell in the comparison was < 5. Standard statistical software was used,^e and a value of $P < 0.05$ was considered significant.

Results

Enrollment and contact information was obtained from 123 adoptive owners. Interviews performed at 1

month after adoption of a dog were successfully completed with 113 (91.9%) owners. Five (4.1%) owners could not be contacted after 10 attempts, and 5 (4.1%) no longer owned their adopted dog. Of the 5 dogs that were no longer in the household, 1 (0.8%) was relinquished because of inappropriate defecation, 1 (0.8%) had died, and 3 (2.4%) were re-homed or relinquished for reasons unrelated to house-soiling.

Treatment group—After randomization, 54 of the 113 (47.8%) owners were allocated to the treatment group and received counseling on house-training prior to adoption of a dog. Of the dogs adopted by owners in the treatment group, 26 (48.1%) were female and 28 (51.9%) were male. Median age of the dogs adopted by treatment group owners was 18 months (range, 6 to 72 months).

Control group—Fifty-nine of the 113 (52.2%) owners did not receive preadoption counseling (control group). Of the dogs adopted by owners in the control group, 23 (39.0%) were female and 36 (61.0%) were male. Median age of the dogs adopted by control group owners was 12 months (range, 6 to 72 months).

House-training assessments—One month after adoption, there was a significant ($P = 0.03$) difference in owner perception of house-training success between dog owners in the treatment and control groups (53/54 [98.1%] owners and 51/59 [86.4%] owners, respectively). No difference in owner perception of baseline house-training status (ie, immediately after adoption) between groups was detected. House-soiling frequency was not significantly different between the groups.

Owners used a variety of methods to house-train their dogs during the first month after adoption (Table 1). The use or lack of use of any particular method did not have a significant effect on house-soiling frequency or owner perception of house-training success. There were, however, significant differences in some of the methods used

Table 1—House-training techniques reported at 1 month after adoption of dogs from a shelter by owners who did (treatment group; $n = 54$) or did not (control group; 59) receive preadoption counseling regarding house-training. Data represent number of owners (%) in each category.

Technique	Group	
	Treatment	Control
Scheduled meal feeding	45 (83.3%)	40 (67.8%)
Frequent trips outside	49 (90.7%)	56 (94.9%)
Food rewards for outdoor elimination	36 (66.7%)	41 (69.5%)
Verbal praise for outdoor elimination	54 (100%)	57 (97%)
Elimination command	35 (64.8%)	32 (54.2%)
Rubbing nose in feces	7 (13.0%)	9 (15.3%)
Verbal punishment for indoor elimination	15 (27.8%)	29 (49.1%) [†]
Physical punishment for indoor elimination	3 (5.6%)	7 (11.9%)
Interruption of indoor elimination	27 (50.0%)	31 (52.5%)
Umbilical cord method*	10 (18.5%)	5 (8.5%)
Crate training	40 (74.1%)	40 (67.8%)
Paper training	2 (3.7%)	5 (8.5%)
Use of enzymatic cleaners on soiled indoor areas	32 (59.3%)	8 (13.6%) [‡]

*Owners keep their dog close to them on a leash in the house while they are at home to prevent elimination accidents. [†]For this technique, value was significantly ($P = 0.02$) different from that of the treatment group. [‡]For this technique, value was significantly ($P < 0.001$) different from that of the treatment group.

between groups, regardless of house-training status. For example, significantly ($P < 0.001$) more owners who received counseling used enzymatic cleaners on soiled areas than owners in the control group (32/54 [59.3%] owners and 8/59 [13.6%] owners, respectively). In addition, enzymatic cleaners were the most commonly used cleaning tool by owners in the treatment group. As part of the preadoption counseling, owners in the treatment group were advised against verbal punishment of their dog after it had eliminated in the house. Significantly ($P = 0.02$) fewer owners who received this counseling used verbal punishment than owners who did not receive counseling (15/54 [27.8%] owners and 29/59 [49.2%] owners, respectively). No other significant differences in methods used by owners in the treatment and control groups were detected. Most owners in the treatment and control groups fed meals at specific times of day (45/54 and 40/59, respectively), gave verbal (54/54 and 57/59, respectively) and food rewards (36/54 and 41/59, respectively) for outdoor elimination, and used crate training (40/54 and 40/59, respectively). Few owners in either the treatment or control group used the umbilical cord method (10/54 and 5/59, respectively) and paper training (2/54 and 5/59, respectively).

Adoption counseling had no effect on owner expectation of house-training success, although most owners in both groups did not expect their dogs to be house-trained at the time of adoption. Only 26.5% (30/113) of all owners interviewed expected their dogs to be house-trained at time of adoption. However, few owners (12/113 [10.6%]) reported that they would relinquish their pet if it was not house-trained on arrival at its new home. Preadoption counseling had no effect on these opinions.

Discussion

Compared with owners of dogs adopted from the shelter who did not receive preadoption counseling, more owners who had been counseled about house-training at the time of adoption considered their dogs house-trained when interviewed at 1 month after adoption, even though there were no differences in the reported frequency of house-soiling after 1 month between the groups. The disparity between the assessment of house-soiling frequency and owner perception of house-training success may indicate that dog owners are willing to overlook infrequent house-soiling and consider their dog house-trained. It also may reflect individual differences; for example, some owners may have perceived their dogs as house-trained even if they were having elimination accidents once per week. The difference between baseline assessment and the 1-month perception of house-training status further supports the effectiveness of preadoption counseling. Counseling appears to have prepared owners for successful management of house-soiling problems, even if those problems were evident immediately after adoption.

Owner perception of a dog's house-training success, regardless of ongoing inappropriate urination or defecation, is an important consideration in the prevention of future relinquishment. Dogs relinquished to shelters for house-soiling problems are reportedly surrendered on the basis of subjective descriptions by

owners that their dogs eliminate in the house or are not house-trained and not because owners report a particular frequency of house-soiling.^{3,6} Thus, owner perception of behavior problems may be a more relevant measure of house-training status than the frequency of house-soiling accidents. Overall, a large percentage of owners in both the treatment and control groups (98.1% and 86.4%, respectively) considered their dogs to be house-trained at 1 month after adoption. This was an unexpected finding because it was assumed that persistent lack of house-training would be common in this dog population.

Epidemiologic data indicating the percentage of dogs that have been house-trained prior to adoption was not available, and comparison of the data obtained in the present study to the national shelter population was difficult. Because house-soiling is a common problem in newly acquired dogs, adoptive owners in both study groups may have sought additional sources of house-training information. The widespread availability of training resources at pet stores and on the Internet is a potential explanation for why the differences between groups were not more marked. Finally, the house-training handout included in the adoption packet may have contributed to the high percentage of dogs that were apparently house-trained after 1 month. Although it would have been informative to assess a third group of owners who did not receive the handout and did not undergo preadoption counseling as part of the present study, the investigators elected to provide this handout to all new owners rather than risk adoption failure because of a complete lack of basic information.

Given the adult ages of the dogs in the study, it is possible that many of the dogs were already house-trained, limiting the ability to detect an improvement in house-training success as a result of preadoption counseling for owners. House-training status prior to the dogs' arrival at the shelter was not examined because information from previous owners is typically lacking for most of the dogs impounded at this shelter facility.^b A follow-up study might attempt to evaluate the effects of preadoption counseling for new owners on house-training success in dogs that were relinquished by their previous owners to the shelter, compared with success in dogs that were impounded as strays.

Fewer owners who received counseling prior to dog adoption used verbal punishment as a house-training method, compared with owners in the control group. Avoiding punishment when a dog has eliminated in the house is an important aspect of successful house-training. A common misconception by pet owners who use verbal punishment in training is that dogs are aware of wrongdoing after urinating or defecating in the house. When owners discover a soiled area, they often describe that their dog had an apparently guilty appearance. The inferred guilt is a signal of submission and appeasement in response to a situation in which the dog has made an association between the presence of urine and feces with historical punishment by the owner. Dogs will quickly learn to associate the harsh tones of an owner's voice with the presence of excrement, even if it is from a different dog.^{11,21} These dogs may then become reluctant to eliminate in the presence of the owner, making it

difficult for owners to train their dogs to eliminate outside. The findings of our study have suggested that preadoption counseling is effective for decreasing the use of verbal punishment during house-training. Few owners in either group reported the use of physical punishment for house-training purposes, which may reflect a general consensus among pet owners that physical punishment is an unacceptable method of training. Owners also may have felt reluctant to admit to a veterinary professional that they physically punished their pet.

Dogs are more likely to eliminate in areas that have been previously soiled.^{9,10,19} Enzymatic cleaning products have been proven to be more effective than odor-masking systems and detergent cleaners in removing excrement odors^{15,16}; in a house, these products are therefore useful in reducing the stimulus for a dog to urinate or urine-mark. Significantly more owners who received counseling used enzymatic cleaners to eliminate odors from soiled areas than owners in the control group. In addition, enzymatic cleaners were the cleaning tools most commonly used by owners in the treatment group. Such products are widely available from grocery and pet supply stores. Results of the present study have suggested that dog owners are not generally aware of the benefits of these products unless they are recommended by pet care personnel. Another potential reason for the difference between the groups is that the recommendation to use enzymatic cleaners was the last topic discussed during the counseling session.

The time required for communication with prospective adoptive owners or veterinary clients can be substantial, and yet the time available to the shelter staff or veterinarian for such interactions is often limited. Focus needs to be placed on information that is most pertinent to pet health and human-animal bond success. Brief preadoption behavior counseling is a useful owner-education tool in shelters. The positive contribution of counseling new owners about house-training to the success of integrating a dog into a new home could be used to advantage at any institution involved in pet adoption and by veterinary professionals during examination of newly acquired pets. Effective advice can be delivered quickly in conversation and augmented by written materials. The effect of counseling new pet owners on other areas of behavioral health, such as puppy socialization, separation anxiety, or aggression, has yet to be explored. However, the findings of the present study have suggested that owners do take behavior problem prevention advice under consideration. When provided to new owners, such advice can help to ensure successful pet adoption.

- a. Franklin County Dog Shelter, 1731 Alum Creek Dr, Columbus, Ohio.
- b. Franklin County Dog Shelter impound totals, 2005, available from the corresponding author on request.
- c. Copies of the telephone survey are available from the corresponding author on request.
- d. Microsoft Office Access 2003, Microsoft Corp, Redmond, Wash.
- e. Stata, version 9.1, StataCorp, College Station, Tex.

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