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Animal Welfare 2012, 21: 51-57
ISSN 0962-7286

Current use of and attitudes towards identification in cats and dogs in veterinary clinics in Oklahoma City, USA

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Abstract

Personalised identification (ID) tags that contain the contact information of pet owners can help ensure a pet gets home quickly. Recent research found that even though ID tags can help get pets home, the majority of pet owners do not consistently provide ID tags. The objectives of this study were to identify the number of animals at our study site wearing an ID tag as well as the owners' reasons for not having them do so and to evaluate the attitudes and perceptions of owners towards pet identification. Pet owners were surveyed when visiting one of five veterinary hospitals and a low cost spay/neuter clinic in Oklahoma City, USA. Out of the 291 pets in the survey, only 59 (20.3%) were currently wearing an ID tag with correct information. When asked how important it was for pets to wear identification, 79.6% of the surveyed pet owners reported it was very or extremely important with only 0.7% reporting that ID tags were not at all important. The most common reason for not placing a tag on their pet was that their pet was 'indoor only' (35.3%), with another 10% reporting their pet did not wear ID because the pet was uncomfortable wearing a collar. The results of this research suggest that a high percentage of pets do not have ID tags and that a programme to place ID tags directly onto the pets has a good potential for success, as there is a positive attitude toward tagging among pet owners.

Keywords: *animal welfare, identification tag, lost cat, lost dog, stray cat, stray dog*

While there has been recent research regarding collars and cats (Lord *et al* 2010), research on pet identification is fairly limited, and the need to understand the motivations of pet owners regarding the attitudes and behaviours regarding identification of their pets is needed. This manuscript presents the results of the first phase of a study to examine retention of collars and ID tags provided to pet owners. The objectives of the present manuscript were to: i) identify the number of animals at the study site which were wearing a collar and identification tags as well as the owners' reasons for not having them do so (baseline assessment); ii) evaluate the attitudes and perceptions of owners towards pet ID tags; and iii) collect baseline demographic and other identification-related information for a follow-up study that involved providing pet owners with collars and tags (Weiss *et al* 2011).

Materials and methods

Site selection

Oklahoma City, OK, USA, was selected because it was part of the American Society for the Prevention of Cruelty to Animals (ASPCA) Partner Community Programme. The ASPCA Partnership is a collaboration between the ASPCA and a community to increase the live-release rate, saving the animals most at risk through sustainable data-driven plans and programmes. Identification of pets for return to owner was a programme priority for this community. The Oklahoma Animal Welfare Division and the Central Oklahoma Humane Society together take in over 85% of the homeless animals in the city. Total dog and cat intake for 2009 was 27,705 with a return-to-owner rate of 5%. The human population of the city in 2000 was 506,132 and the median income in 1999 was $34,947 (US Census Bureau QuickFacts 2000). Twenty-two percent of households had children under 18 years of age (US Bureau American FactFinder 2000).

Spay/neuter (S/N) facilities and veterinary hospitals (in combination referred to as clinics) were identified for inclusion by their willingness to participate in the study and their proximity to each other for study simplicity.

Baseline collar and ID tag use

Prior to the baseline survey, each veterinary hospital was asked to collect data for two weeks about each cat and dog entering the hospital. The front-desk staff were asked to collect the data. Animals needing urgent medical care were excluded. The staff were given an instruction sheet and a data form for each day to indicate, for each animal, the date, species, breed and presence of collar, identification tag or rabies tags well as to scan for a microchip and indicate if one was found.

Baseline survey

Current cat or dog owners visiting the clinics in the study city between mid-November and mid-December 2009 were recruited for the study. Clients with very sick or injured pets were excluded from the study. The receptionist at each clinic handed the survey to the clients as they waited to visit with the veterinarian, or drop their pets off for surgery (in the case of the S/N facility). Owners were asked to complete a short baseline survey at the clinic indicating their attitudes about collars and identification and their use of collars, identification tags, rabies tags and microchips. Owners were also asked if they would participate in a post-intervention telephone questionnaire in four to six weeks and to provide a name and telephone number if so. In addition, the owners were asked if they would like a collar and personalised identification tag if the pet did not already have one.

No identifying information, except for the pet's name, was recorded. With the exception of a question about the number of other pets in the household, the attitudes and behaviours applied to the pet currently at the clinic.

If their pet already had identification of some description, clients were also asked about where the identification was obtained and why they acquired it. If their pet did not currently have some identification they were asked why not and where they would go to get identification if they decided to do so. Owners were asked if any of their pets had been lost and returned due to identification and if the contact information on the tag was current. Demographic questions about the pet's duration of living in the household, number of other pets, presence of children under-18 in the household and approximate household income were included. All questions were multiple-choice except for the reasons why they had acquired identification for their pet (if they already had at the time of the veterinary visit or spay/neuter visit).

Provision of personalised identification (intervention)

Each clinic was provided a tagging machine, collars and tags. For the veterinarian hospitals, when the client entered the examination room the veterinary technician took the survey and asked the client if they would like to receive a free personalised ID tag and a collar (the latter was offered only if the pet was not already wearing a collar). At the S/N facilities this occurred during the intake process for the pet. ID tags were made using portable IMARC™ tag machines (IMARC Engraving Systems, Phoenix, AZ, USA) which engraved the owner's information into the metal tag. Tags, and collars if needed, were placed directly on the pet by the veterinary technician or S/N facility staff (for the S/N population, collars and tags were most often placed on the pets post surgery). Staff were trained on how to place the collars, and how to create and place the tags. Collars were standard nylon buckle collars of a variety of sizes and colours obtained from Campbell Pet Products (Brush Prairie, WA, USA).

Statistical analysis

Data from all categorical answer questions were summarised using frequency and percentages. To examine the differences between what owners said and what they actually did was important, we compared the perceived importance of wearing identification at all times, with whether the pet normally wore an identification tag with contact information or was currently wearing a collar, an ID tag or a rabies tag using the Fisher's exact test. $P < 0.05$ was considered to be statistically significant. We categorised this perceived importance into 'not at all important', 'not very' and 'somewhat' (less important) and

'very' and 'extremely' (more important). These analyses were further stratified by species. Perception of importance of identification (less important compared to referent group more important) was used as the dependent variable to examine the relationship between this variable and the following independent variables: species, spay/neuter facility or veterinary clinic, length of time owned pet, presence of other pets, how often wear identification, currently wearing a collar, tag, rabies tag or microchip, if the pet had ever been lost, number of children in the home, household income and if they took the collar or not. A multivariate logistic regression using a backwards-stepwise elimination procedure was performed. Independent variables with $P < 0.25$ in the univariable logistic regression analyses were included in the backwards process. Highly correlated variables were identified using Fisher's exact test and one of the variables was selected based on the importance to our study or our ability to modify the variable through education. The likelihood ratio test was used to determine if variables should be kept in the final model ($P < 0.05$) (Dohoo *et al* 2009). Odds ratios and 95% confidence intervals (CI) were calculated for variables in the final model. Assessment of model fit was done by performing the Hosmer-Lemeshow goodness-of-fit test. After the modeling process, interaction terms were created between all independent variables in the model. These interactions were then added to the final model and tested for significance as above. All statistical analyses were conducted using Stata 11.1 (StataCorp LP, College Station, TX, USA).

Results

Baseline collar and tag use

Among 402 cats and dogs included in the baseline collar and tag use evaluation, 202 were from S/N facilities and 200 were from veterinary hospitals. One hundred and thirty-five were cats (34%) and 267 of the pets were dogs (66%). Cats were much less commonly wearing ID tags than dogs (see Table 1 for details).

Baseline study survey

For the baseline survey, there were 291 surveys from the veterinary hospitals and s/n facilities prior to the offer of a collar and personalised ID tag. There were 65 (22%) cats and 226 (78%) dogs included in the survey (see Table 2 for details).

For the open-ended question about what prompted owners to get an ID tag for their animal, the most common theme was a fear of the animal getting out or loose or to ensure the safe return of the pet (61 responses). Much less commonly mentioned were previous lost animals (nine responses), other broad statements about loving their pet or always having had ID tags (nine responses) and it being mandatory for a medical condition or from the veterinarian (eight responses).

In the baseline analyses, there were no significant differences between whether cats normally wore an identification tag with contact information and perceived importance (more important/less important) ($P = 0.09$). However, there were differences between perceived importance and how often dogs normally wore an identification tag with contact information. Of the 185 dog owners (three were missing data) who perceived it was more important for their pets to wear identification at all times, only 84 (45%) normally had their dog always wearing an identification tag with contact information ($P < 0.001$). Similarly, dog owners but not cat owners had a significant association between perceived importance (more important) and their pet currently wearing identification tags (cats, $P = 0.2$ and dogs, $P = 0.003$) or rabies tags (cats, $P = 0.5$ and dogs, $P = 0.007$). Eighty-one percent of cat owners (34/42) and 57% of dog owners (108/188) who thought identification was more important did not have an identification tag or rabies tag on their pets.

Table 1 Baseline identification use for dogs and cats entering s/n facilities and veterinary hospitals prior to the intervention study.

Type of identification	Cat	Dog	Total
	N (%)	N (%)	N (%)
Wearing a collar (yes)	16 (12)	209 (78)	225 (56)
Wearing an ID tag (yes)	4 (3)	66 (25)	70 (17)
Wearing a rabies tag (yes)	5 (4)	95 (36)	100 (25)
Not wearing any tag	127 (94)	146 (55)	273 (68)
Having a microchip (yes)	1 (1)	11 (4)	12 (3)

Multivariate logistic regression analysis

For perceived importance of wearing identification (how important do you think it is for animals to wear identification at all times) as the dependent variable, species, type of clinic, how often the pet normally wears a collar, and currently wearing a collar, ID tag, rabies tag or taking a collar were associated at $P < 0.25$. In assessing collinearity, how often normally wear a collar was significantly associated with currently wearing a collar, ID tag and rabies tag and having a microchip. Because how often the pet normally wears a collar was considered to be more subjective, the currently wearing variables were used in the logistic regression. The variable which indicated whether the owner took a collar or not was also dropped in the logistic regression model due to collinearity with ID tag (no important change in the final model, data not shown). In the final multivariate logistic regression analysis, owners were 8.0 times more likely to have their pet currently wearing an ID tag (95% CI: 1.9–34.2; $P = 0.005$) and 2.4 times more likely to have a dog (95% CI: 1.3–4.6; $P = 0.007$) if they perceived wearing of identification to be more important. The model fitted well and there were no statistically significant interactions.

Table 2 Demographic data, perception of importance, normal and current wearing of identification as well as information about reasons for not wearing a collar in the baseline analyses.

Question	Cats	Dogs	Total
	N (%) n = 65	N (%) n = 226	N (%) n = 291
How important do you think it is for animals to wear identification at all times			
Extremely important	22 (33.9)	116 (51.8)	138 (47.8)
Very important	20 (30.8)	72 (32.1)	92 (31.8)
Somewhat important	17 (26.2)	30 (13.4)	47 (16.3)
Not very important	5 (7.7)	5 (2.2)	10 (3.5)
Not all important	1 (1.5)	1 (0.5)	2 (0.7)
How often does your animal normally *wear an identification tag with your contact information*			
Always	7 (11.1)	88 (39.5)	95 (33.2)
Usually	2 (3.2)	27 (12.1)	29 (10.1)
Sometimes	9 (14.3)	23 (10.3)	32 (11.2)
Rarely	8 (12.7)	23 (10.3)	32 (11.2)
Never	37 (58.7)	60 (26.9)	97 (33.9)
Is your animal currently wearing a collar and/or identification			
Wearing a collar	16 (24.6)	166 (73.5)	182 (62.5)
Wearing an ID tag with your contact information	5 (7.7)	54 (23.9)	59 (20.3)
Wearing a rabies tag	10 (15.4)	60 (26.6)	17 (24.1)
Not wearing any tag	55 (84.6)	141 (62.4)	196 (67.4)
Has a microchip	1 (1.5)	13 (5.8)	14 (4.8)
Reasons why the animal does not currently wear an ID tag (more than one answer); (n = 232)	n = 60	n = 172	n = 232
My animal is indoor only	37 (61.7)	45 (25.2)	82 (35.3)
Uncomfortable with a collar	8 (13.3)	17 (9.9)	25 (10.8)
Other, just got a pet	4 (6.7)	17 (9.9)	21 (9.2)
ID tags and collars are too expensive	0	16 (9.3)	16 (16.9)
Other, loses collar	3 (5.0)	9 (5.2)	12 (5.2)
Our ID tags have out-dated information	0	10 (5.8)	10 (4.3)
ID tags are not necessary where we live	3 (5.0)	6 (3.5)	9 (3.9)
Other, just haven't got one	2 (3.3)	6 (3.5)	8 (3.4)
My animal has a microchip	1 (1.7)	4 (2.3)	5 (2.2)
Others	4 (6.7)	13 (7.6)	17 (7.3)
Where did you obtain your animal's ID tag?			
Pet supply store	8 (66.7)	50 (45.1)	58 (47.2)
My veterinarian	4 (33.3)	40 (36.0)	44 (35.8)
Local shelter/rescue	0	4 (3.6)	4 (3.3)
Other	0	5 (4.5)	5 (4.1)
Not sure	0	12 (10.8)	12 (9.8)
Has this animal ever been lost and then returned to you because it wore an ID tag			
Yes	1 (3.0)	17 (11.9)	18 (10.2)
No	31 (93.9)	120 (83.9)	151 (85.8)
Not sure	1 (3.0)	6 (4.2)	7 (4.0)
Has this animal ever been lost and then returned to you because it had a microchip	n = 1	n = 14	n = 15
Yes	0	1 (7.7)	1 (7.1)
No	1 (100)	11 (84.6)	12 (85.7)
Not sure	0	1 (7.7)	1 (7.1)

Table 2 (cont)

Question	Cats N (%) n = 65	Dogs N (%) n = 226	Total N (%) n = 291
Is the contact information on your animal's ID tag up-to-date (if currently wearing)?	n = 5	n = 54	n = 59
Yes	5 (100)	47 (87.0)	52 (88.1)
No	0	7 (13.0)	7 (11.9)
If you were to get a collar and tag for your animal where did you get it?	n = 48	n = 139	n = 187
My veterinarian	17 (35.4)	60 (43.2)	77 (41.2)
It does not matter	14 (29.2)	51 (36.7)	65 (34.8)
Pet supply store	10 (20.8)	17 (12.2)	27 (14.4)
Others	7 (14.6)	11 (7.9)	18 (9.6)
Did the owner take the collar?			
Yes	63 (98.4)	192 (86.1)	255 (88.9)
No	1 (1.6)	31 (13.9)	32 (11.2)
Type of veterinary clinic			
Spay/neuter facility	26 (40)	50 (22.1)	76 (26.1)
Veterinary hospital	39 (60)	176 (77.9)	215 (73.9)
How long has this pet lived in your household?			
< 6 months	30 (46.2)	92 (41.3)	122 (42.4)
6 months to 1 year	12 (18.5)	29 (13.0)	41 (14.2)
> 1 year to 2 years	6 (9.2)	33 (14.8)	39 (13.5)
3 to 4 years	9 (13.9)	24 (10.8)	33 (11.5)
5 to 6 years	4 (6.2)	15 (6.7)	19 (6.6)
7 to 8 years	2 (3.1)	9 (4.0)	11 (3.8)
Greater than 8 years	2 (3.1)	21 (9.4)	23 (8.0)
Do you have other cats or dogs?			
No	13 (20)	54 (24.1)	67 (23.2)
Yes, 1 or 2 total pets	25 (38.5)	99 (44.2)	124 (42.9)
Yes, 3 or 4 total pets	15 (24.6)	50 (22.3)	66 (22.8)
Yes, 5 or more total pets	11 (16.9)	21 (9.4)	32 (11.1)
How many children under 18 are currently living in your household?			
None	38 (65.5)	102 (53.7)	140 (56.5)
1 or 2 children	16 (27.6)	60 (31.6)	76 (30.7)
3 or 4 children	4 (6.9)	25 (13.2)	29 (11.7)
5 or more children	0	3 (1.6)	3 (1.2)
What is your approximate annual household income?			
Less than $25,000	20 (40)	69 (42.9)	89 (42.2)
$25,000 to $49,999	22 (44)	52 (32.3)	74 (35.1)
$50,000 to $89,999	7 (14)	28 (17.4)	35 (16.6)
$90,000 or more	1 (2.0)	12 (7.5)	13 (6.2)

Discussion

The low prevalence of tagging overall is notable, as a simple personalised ID tag is likely one of the most direct routes to ensure a found pet is returned quickly to the pet owner. This finding supports earlier research in which only 43% of dogs (Lord *et al* 2007b) and 14% of cats (Lord *et al* 2007a) that were lost had any visual identification at the time they were lost. Even in this small sample, 17 dogs and one cat had been lost and returned due to an ID tag; one was returned due to having a microchip under-scoring the importance of identification. Of great interest is the difference between attitude and the actual behaviour of providing visual identification for a pet. The data indicate that while the actual behaviour of providing an identification tag is quite low, the attitudes about the importance of doing so are fairly high. The strength of this disparity is much stronger with dogs than with cats. This difference may be due to the low tag use in cats overall, the smaller cat sample, as well as potential owner perceptions regarding placing a collar on their cat. In a previous study designed to evaluate if cats could successfully wear collars (Lord *et al* 2010), only 37.5% of cat owners believed their cat would tolerate wearing a collar extremely or moderately well prior to the start of the study, despite the fact that 72.7% successfully wore the collars for six months. This perception of a cat's ability to wear a collar is most likely responsible for at least part of the lower percentage of cats actually wearing visual identification in this study.

The reasons for not providing visual identification for a pet are of interest in the development of an effective intervention to increase the percentage of tagged pets. 'My pet is indoor only' accounted for 62% of cats not wearing tags and 25% of dogs not wearing tags. This is consistent with a prior study (Lord 2008) where 51% of cat owners did not provide ID tags for their cats because they were indoor only. It is slightly ironic that dogs and cats were in a clinic, away from home and obviously outside during the travel, when this question was answered. The second likely reason for not providing a tag is that their pets were uncomfortable with a collar, with 13% of cats and 10% of dogs reported as such. Although pets may experience discomfort with wearing a collar, this can often be overcome with patience and proper collar fitting. In a prior study (Lord *et al* 2010), although owners reported issues with wearing a collar such as scratching excessively at the neck or the collar coming off, 72.7% of cats successfully wore the collar for the length of the six-month study and 90% of owners planned to continue to leave the collar on their cats after the study ended.

Nine percent of pets were reported to not have ID tags because they were just acquired, making the point of acquisition an important place for identification to be provided. Veterinarians were the most common selection choice for where owners would go to get identification, making veterinary clinics another option for a source of ID tags. Similarly, veterinarians and pet supply stores were the most common sources of ID tags for pets which already had them. In addition, only dog owners reported that ID tags and collars were too expensive and that the information on the tag was out of date. Five percent of pets lost their collars, which is consistent with a prior study (Lord *et al* 2010) where 7% of cats in the study lost their collars, despite the collars being properly placed on the cats. This indicates a need to make sure owners know how to properly place a collar on their pet and the recognition that for a small percentage of pets, permanent identification may be the only realistic method of providing identification.

The owners in this study had a similar median income (US$25,000–49,999) to that reported for the city (~35,000) (US Census Bureau QuickFacts 2000). This provides some support that the sample was representative of the human population in income. However, our sample had a much higher frequency of children in the home (44 vs 22%) (US Census American FactFinder 2000). This is due partly to pet-owning households being more likely to also have children (US Pet Ownership 2007). More than half of the pets in our study had been in the household one year or less (57%). This is not surprising for the s/n facilities in that these pets would likely be brought in at less than a year of age. For veterinary hospitals, animals who were very sick or injured were excluded. This could have further biased the sample toward younger pets. The households in our sample were similar to the national frequencies of pet ownership with the majority having one or two pets in the home (US Pet Ownership 2007).

The strong and prevalent positive attitude toward the importance of tagging suggests that a programme that placed collars and tags directly on pets has good potential for success, as it is the behaviour of tagging as opposed to the attitude regarding tagging that would need to change. By making the behaviour of placing a tag on a pet as easy as possible, a significant increase in ID tag use may be possible.

A limitation of this study is the inclusion of only one city. Because relatively little is known about the use and attitudes surrounding ID tags, it is impossible to estimate the generalisability of this study. However, none of the demographic data were associated with perceived importance of wearing identification at all times which may indicate that perceptions and behaviour are based on other factors. The small number of cats in the study could also have influenced the results. We instructed the staff at the clinics to include all owners and pets (except for seriously ill or injured animals) but we have no way of assessing staff compliance or what constituted an exception for each staff member or facility nor number of owners who refused to participate. However, our objective was to conduct this work in the real world where our future work would be applied and there was no other way to obtain the information and provide collars and tags in a non-obtrusive way at these facilities.

An additional possible explanation for the high rate of perceived importance of wearing collars and tags is desirability bias where respondents tend to provide the more socially acceptable response. Having a collar and tag could be viewed in this way. However, this question is likely much less sensitive with fewer consequences than highly

personal questions on topics such as drug use. Also, the perception question was asked before the question about actual use of identification, possibly decreasing bias. Having the owners complete the surveys themselves without direct interaction or supervision with another person tends to decrease the occurrence of this type of bias (Tourangeau & Yan 2007).

Animal welfare implications

The positive attitudes towards the importance of ID tagging by both cat and dog owners provide the opportunity for research to raise the frequency of pets wearing ID tags. Pets with ID tags are likely to be more easily returned to their owners if they become lost, enter a shelter or are injured. Identification of pets is also crucial in the event of a disaster. This makes ID tags a very simple method of improving the quality of life for pets and helping to ensure their owners have a chance of being reunited if their pets become lost.

Acknowledgements

We thank the staff at the Oklahoma City Animal Welfare Division and the Central Oklahoma Humane Society as well as the staff and clients at Pet Health Plus Veterinary Clinic, Rock Knoll Veterinary Hospital, Awesome Care Veterinary Clinic, and Southside Dog, Cat and Bird. This project was funded internally by the ASPCA.

References

Dohoo IR, Martin SW and Stryhn H 2009 *Veterinary Epidemiologic Research*. VER Inc: Charlottetown, Prince Edward Island, Canada

Humane Society of the United States 2009 http://www.humanesociety.org/issues/pet_overpopulation/facts/overpopulation_estimates.html. (accessed 20 December, 2010)

Lord LK 2008 Attitudes toward and perceptions of free-roaming cats among individuals living in Ohio. *Journal of American Veterinary Medical Association 232*: 1159-1167

Lord LK, Griffin B, Slater MR and Levy JK 2010 Evaluation of collars and microchips for visual and permanent idenfication of pet cats. *Journal of American Veterinary Medical Association 237*: 387-394

Lord LK, Wittum TE, Ferketich AK, Funk JA and Rajala-Schultz P 2007a Search and identification methods that owners use to find a lost cat. *Journal of American Veterinary Medical Association 230*: 217-220

Lord LK, Wittum TE, Ferketich AK, Funk JA and Rajala-Schultz P 2007b Search and identification methods that owners use to find a lost dog. *Journal of American Veterinary Medical Association 230*: 211-216

Lord LK, Wittum TE, Ferketich AK, Funk JA and Rajala-Schultz PJ 2007c Search methods that people use to find owners of lost pets. *Journal of the American Veterinary Medical Association 230*: 1835-1840

Tourangeau R and Yan T 2007 Sensitive questions in surveys. *Psychological Bulletin 133*: 859-883

Weiss E, Slater MR and Lord LK 2011 Retention of provided identification for dogs and cats in veterinary clinics and adopted from shelters in Oklahoma City, OK, USA. *Preventive Veterinary Medicine 101*: 265-269

US Census Bureau, American FactFinder 2000 http://factfinder.census.gov/servlet/QTTable?_bm=y&-qr_name=DEC_2000_SF1_U_DP1&-ds_name=DEC_2000_SF1_U&-_lang=en&-geo_id=16000US4055000. (Accessed 12 September 2010)

US Census Bureau, QuickFacts 2000 http://quickfacts.census.gov/qfd/states/40/4055000.html. (Accessed 12 September 2010)

US Pet Ownership 2007 *US Pet Ownership & Demographics Sourcebook*. American Veterinary Medical Association: Schaumburg, IL, USA