Attitudes of owners influence various dog management behaviours

Presenter: Vanessa Rohlf, Animal Welfare Science Centre, Monash University
Email: vanessa.rohlf@med.monash.edu.au

Abstract

Various dog management behaviours must be performed by owners to promote both the welfare of dogs and community health, safety and amenity. Research investigating factors that influence owner behaviours is lacking. In this study we conducted an online survey of over 1000 Australians, seeking factors that predict management behaviours. These behaviours include confinement, registration, microchipping, desexing, participation in formal obedience training and regular socialisation with other people and dogs. Compliance was generally high, ranging from 98% for confinement of dogs to 64.5% for attendance at obedience classes. Attitudes and demographic variables were particularly relevant in predicting management behaviours less regulated by laws (e.g. desexing behaviours). An unexpected finding was that dog owners are particularly sensitive to normative expectations; their choice of whether or not to perform some management behaviours was dependent on what they believed their friends and family members would expect. This has important implications. Educational campaigns to promote responsible dog ownership are most likely to be effective if these specific attitudes are addressed.

Introduction

Approximately 40% of Australian households own at least one companion dog (Heady 2006). Dog ownership confers various benefits to individual owners as well as the community (Anderson et al 1992; Cutt et al 2008; Wood et al 2005). Despite these benefits there are disadvantages associated with high dog ownership rates. Barking dogs can be the source of neighbourhood disputes (Kayrooz et al 2003). Roaming dogs can cause car accidents, property damage, and injure or kill livestock. Additionally, many lost and abandoned dogs end up in shelters and if not reclaimed or rehomed a large proportion are euthanased for behaviour problems or because they are unwanted (Marston et al 2004).

Many of these disadvantages arise out of mismanagement on the owners' behalf and it is up to local government to effectively manage companion animals through the promotion of responsible pet ownership. While there is no clear definition of responsible pet ownership there are a number of management behaviours that encompass this concept. Confinement of dogs to the owner's property, except when taken out by the owner, may reduce the risk of dogs becoming lost or a nuisance to others. If dogs do become lost then identification by means of registration and microchipping may increase the chances of reunion (Lord et al 2007). Appropriate training and socialisation is also associated with positive outcomes for both dogs and their owners (Bennett & Rohlf 2007). Desexing is suggested as a responsible means of preventing overpopulation.

Responsible dog ownership practices are typically promoted through regulations, however achieving compliance can often be an issue faced by animal management personnel. In broad terms, there are two types of dog owners that do not comply with responsible pet ownership practices. First, there are those that are highly motivated dog owners, who are typically emotionally bonded to their dog but who for unknown reasons may hold negative or ambivalent attitudes towards specific management behaviours. Second, there are unmotivated dog owners, who may not be bonded to their dog or who are generally civilly disobedient. Measures to address compliance differ between these two groups. Motivated dog owners are more likely to comply with dog management behaviours following campaigns seeking to address attitudes, whereas unmotivated dog owners are probably unlikely to respond to such campaigns and may only respond through direct enforcement such as fines. This paper seeks to address factors underlying compliance in motivated dog owners. If these factors can be identified then the information can be used to develop education campaigns seeking to encourage compliance in this group of dog owners.

There are three aims of this paper. The first aim is to characterise a sample of dog owners motivated enough to complete an online survey. The second aim is to determine, in this sample, the frequency of compliance to management behaviours including confinement, registration, microchipping, desexing, training and socialisation. The third aim is to identify attitudinal and relationship factors predicting compliance with dog management behaviours while controlling for demographic variables.

Method

Participants

The sample comprised 1016 adult dog owners from Australia who volunteered to complete an online survey.

Materials

A dog ownership survey was developed using information gained from a literature review and discussion with experts. Questions relating to demographic information, beliefs, the dog owner relationship, and ownership behaviours pertaining to the performance of confinement, registration, microchipping, desexing, formal obedience training and socialisation were explored (Rohlf et al submitted). Participants also completed the Monash Dog Owner Relationship Scale (MDORS), which measures emotional closeness between owner and dog, shared activities and the perceived costs of dog ownership (Dwyer et al 2006).

Table 1: Frequency counts (F) and Percentages (%) for Demographic Variables.

Variable		*F* (%)
Location	Victoria	630 (62.1)
	New South Wales	166 (16.4)
	Queensland	68 (6.7)
	Tasmania	62 (6.1)
	South Australia	41 (4.0)
	Western Australia	40 (3.9)
	Northern Territory	7 (.7)
Owner's gender	Male	127 (12.6)
	Female	882 (87.4)
Number of dogs	One	541 (53.2)
	Two	265 (26.1)
	Three	117 (11.5)
	Four	41 (4.0)
	Five or more	52 (5.1)
Level of thought before acquisition	No thought	31 (3.1)
	A little thought	52 (5.1)
	Some thought	104 (10.3)
	Quite a bit of thought	293 (29.1)
	A great deal of thought	531 (52.4)
Highest level of education	Primary school	4 (.4)
	Secondary school	211 (21.0)
	TAFE	167 (16.6)
	University (undergraduate)	320 (31.8)
	University (postgraduate)	304 (30.2)
Income (before tax)	Less than $30,000	79 (8.0)
	$30,001 - $50,000	110 (11.2)
	$50,001 - $70,000	173 (17.6)
	$70,001 - $90,000	153 (15.6)
	$90,001 - $120,000	212 (21.6)
	$120,001 - $150,000	121 (12.3)
	$150,001 - $200,000	81 (8.2)
	More than $200,000	53 (5.4)
Breed type	Pure bred	622 (61.5)
	Cross bred	390 (38.5)
Dog's sex	Male	517 (51.1)
	Female	493 (48.9)

Procedure

Data were collected anonymously using a convenience sample via an online questionnaire between July 21st and September 9th 2008. A link to the questionnaire was posted via email, on a University website, Facebook, and dog related discussion forums.

Data analyses

A series of forced entry Sequential Logistic Regression (SLR) analyses were computed to determine which attitudinal and relationship dimensions best predicted owners' performance of management behaviours after controlling for demographic variables. SLR is a statistical technique used to predict a dichotomous dependent variable from a set of independent variables (Tabachnick & Fidell 2008). Compliance with each management behaviour was entered as the dependent variable. Demographic variables were entered in Step 1 followed by attitudinal and relationship variables in Step 2 (the final model). All final models were significant at the 0.05 alpha level. Only variables making a significant contribution to each model are presented. Odds ratios indicate the probability of an event occurring in the presence of that predictor. If the odds ratio is greater than one, then the event is more likely to occur and if the odds ratio is less than one, the event is less likely to occur (Tabachnick & Fidell 2008).

Results and discussion

Sample characteristics

As can be seen from Table 1, participants were drawn from all Australian states and territories, although the majority lived in Victoria (62.1%). The mean age of respondents was 38.22 years (*SD* = 12.30, Range = 18 to 91 years). Most respondents were female (87.4%). All respondents were current dog owners. Half of the sample owned only one dog (53.2%). A similar proportion reported that they engaged in a great deal of thought before acquiring their dog (52.4%). Just over 20% reported that their highest level of education was secondary school or below and two thirds of the sample were university graduates with an undergraduate (31.8%) or postgraduate (30.2%) degree. Most household incomes ranged from $50,001 to $120,000 (54.8%). Most dogs within the sample were purebred (61.5%). The mean age of dogs was 5.67 years (*SD*=3.81). Male (51.1%) and female (48.9%) dogs were equally represented. As ascertained by the MDORS, respondents were emotionally close to their dog (Emotional Closeness subscale: *M*=3.92, *SD*=.63), frequently engaged in activities with their dog (Dog Owner Interaction subscale: *M*=3.89, *SD*=.63) and perceived few costs associated with dog ownership (Perceived Costs subscale: *M*=1.83, *SD*=.55).

Levels of compliance

Level of compliance was high as expected in this sample of highly motivated dog owners. The majority of owners reported confining their dog to their property except when it was taken on outings (98%), and they had registered (90.4%), microchipped (86.5%) and desexed (80.4%) their dog. Just over half of the respondents had taken their dog to obedience training at least once (64.5%) and most regularly socialised their dog (86.6%).

Predicting compliance

Confinement

SLR analysis found that attitudes and dog-owner relationship variables significantly predicted confinement behaviour. Step 1 of SLR revealed a significant relationship between demographics and confinement ($X^2 = 24.75$, $df = 15$, $p = 0.05$). However, the addition of attitudinal and relationship beliefs in Step 2 significantly improved the model ($X^2 = 48.53$, $df = 12$, $p = 0.001$). Table 2 reveals that only one variable significantly predicted confinement.

As can be seen from Table 2, the belief that confinement should be the law resulted in a five-fold increase in the likelihood of confinement. This means that the more owners believed that confinement should be law the more likely they confined their dog. Most states within Australia require confinement and typically impose fines for noncompliance. These results indicate widespread support for this requirement, which translates into compliance among highly committed dog owners. The high compliance rates precluded the identification of beliefs associated with noncompliance, however education programs that emphasize the importance of confinement for the safety of the dog and the community may be an effective way to encourage support for this responsible behaviour.

Registration

Step 1 of the SLR revealed that demographic variables were not significantly related to registration ($X^2 = 20.08$, $df = 15$, $p = 0.17$). Step 2 of SLR revealed that the addition of attitudinal and relationship variables significantly improved the model ($X^2 = 163.82$, $df = 13$, $p = 0.001$). The results of Step 2 of the SLR analysis are presented in Table 3.

Table 2: Sequential logistic regression analysis of confinement as a function of demographics, relationship and attitudinal variables

Variable	B	S.E.	Wald	*p*	OR	CI
Attitudinal variable						
Confinement should be law	1.65	0.43	14.56	.001	5.25	2.24-12.31

Table 3: Sequential logistic regression analysis of registration as a function of demographics, relationship and attitudinal variables

Variables	B	SE	Wald	*p*	OR	CI
Demographics						
Other dogs	-.310	.118	6.95	.008	.733	(.582-.923)
Attitudinal variables						
Registration is difficult	-.367	.176	4.36	.037	.693	(.491-978)
Registration is expensive	-.294	.150	3.87	.049	.745	(.556-.999)
Registration is a practice that my friends and family would agree with	1.04	.225	21.63	.001	2.84	(1.83-4.42)

As can be seen in Table 3, four variables made a significant contribution to the model. Households with more than one dog were less likely to register their dogs than those with only one dog. This may be due to the increase in cost of registration for extra dogs. Supporting this claim is the finding that the belief that registration is expensive decreased the likelihood of registration. The finding that household income was not related to compliance with registration requirements suggests that the belief that registration is expensive may be due to owners believing that this expense is not justified or that the funds are not used appropriately. The belief that registration was difficult was also associated with a decreased likelihood of compliance. In Australia, some local government areas offer lifetime registration while others require payment annually. This may lead to confusion on the part of some dog owners. Education programs to provide information about registration requirements, services funded by registration income, especially those services that directly benefit dog owners, may therefore be worthwhile. An important finding was that registration was positively influenced by the belief that it is a behaviour that would be endorsed by family and friends. The influence of normative pressure on compliance with management practices has not been reported elsewhere but the views of family and friends are important predictors of other socially responsible behaviours, such as consumption of alcohol and tobacco (McMillan & Conner 2003). Use of this information may therefore enable regulators to increase compliance with the requirement to register animals.

Microchipping

Step 1 of SLR revealed that demographics were related to microchipping ($X^2 = 90.63$, $df = 15$, $p = 0.001$). The addition of attitudinal and relationship variables in Step 2 significantly improved the model ($X^2 = 193.93$, $df = 12$, $p = 0.001$). The results of Step 2 of the SLR indicated that demographic, relationship and attitudinal variables made a significant contribution to the prediction of microchipping. These results are presented in Table 4.

Table 4: Sequential logistic regression analysis of microchipping as a function of demographics, relationship and attitudinal variables

Variables	B	SE	Wald	*p*	OR	CI
Demographics						
State			20.02	.003		
New South Wales *vs.* Victoria	1.67	.692	5.84	.016	5.32	1.37-20.66
Queensland *vs.* Victoria	-1.06	.447	5.68	.017	.345	.144-.828
Dog age	-.126	.033	14.45	.001	.882	.826-.941
Level of thought	.254	.116	4.81	.028	1.29	1.03-1.62
Relationship variables						
Perceived costs	.775	.276	7.90	.005	2.17	1.26-3.73
Dog Owner Interaction	.774	.246	9.19	.002	2.10	1.30-3.41
Attitudinal variables						
Microchipping is unnatural	.390	.145	7.23	.007	1.48	1.11-1.96
Microchipping is difficult	-.633	.184	11.87	.001	.531	.371-.761
Microchipping is expensive	-.307	.144	4.53	.033	.736	.555-.976
Microchipping is a practice that my friends and family would agree with	.905	.217	17.39	.001	2.47	1.62-3.78

Table 5: Sequential logistic regression analysis of desexing as a function of demographics, relationship and attitudinal variables

Variables	B	SE	Wald	p	OR	CI
Demographics						
Dog age	.102	.031	10.70	.001	1.12	1.04-1.18
Pure Breed *vs.* Cross breed	1.59	.279	32.52	.001	4.90	2.84-8.45
Attitudinal variables						
Desexing is good for dogs behaviour	.496	.135	13.59	.001	1.64	1.26-2.14
Desexing should be the law	.360	.099	13.17	.001	1.43	1.18-1.74
Desexing is a practice that my friends and family would approve of	.440	.154	8.13	.004	1.55	1.15-2.10

As can be seen in Table 4, microchipping was predicted by state of residence, dog age and level of thought before acquisition. Two relationship variables also predicted microchipping, along with four belief statements. Residents in Queensland were less likely to microchip their dog than residents in Victoria, who were less likely to microchip their dog than residents in New South Wales. This is interesting because permanent identification by means of microchipping is compulsory for dogs in Victoria and New South Wales but not Queensland, this law being introduced in New South Wales in 1999 and in Victoria in 2005. Hence our findings provide strong evidence that legislation is effective in increasing compliance with this responsible behaviour. Further evidence for the effectiveness of legislation is provided by the finding that younger dogs were more likely to be microchipped than older dogs. Compliance with microchipping was more likely if owners perceived there were considerable costs associated with owning their dog. Perhaps this indicates that these owners are more aware of and realistic about their responsibilities as a dog owner. Supporting this hypothesis is the finding that more time spent thinking about acquiring a dog, and perhaps gathering information about the responsibilities of ownership, was associated with an increased likelihood of microchipping. Microchipping was also more likely if owners interacted with their dog more often; including taking the dog in the car and taking it to visit people, and if the respondent believed it was a practice that friends and family would approve of. This indicates that normative pressure to perform microchipping influences compliance. Microchipping was less likely if owners perceived this procedure to be unnatural, difficult or expensive. One way to circumvent these issues is to legislate to ensure that all dogs are microchipped prior to purchase, as is currently the case in Victoria and New South Wales.

Desexing

Step 1 of SLR indicated that demographic variables were significantly related to desexing ($X^2 = 111.86$, $df = 15$, $p = 0.001$). Step 2 indicated that the addition of attitudinal and relationship variables improved the model ($X^2 = 119.67$, $df = 12$, $p = 0.001$). The results presented in Table 5, show that five variables predicted desexing.

As can be seen in Table 5, younger dogs and purebred dogs were less likely to be desexed than older dogs and crossbred dogs. Beliefs that desexing is good for behaviour, should be required by law and is a practice that family and friends would endorse predicted this practice. Hence, campaigns targeting these beliefs are most likely to increase compliance, at least in dog owners who are already generally responsible.

Obedience training

Step 1 of SLR revealed that demographic variables were significantly related to participation in obedience training ($X^2 = 91.02$, $df = 15$, $p = 0.001$). Step 2 of the model indicated that attitudinal and relationship variables were also significantly related to obedience training attendance ($X^2 = 106.08$, $df = 14$, $p = 0.001$). Table 6 presents the results from Step 2 of the SLR analysis, showing that seven variables predicted training attendance.

Table 6: Sequential logistic regression analysis of training as a function of demographics, relationship and attitudinal variables

Variables	B	SE	Wald	p	OR	CI
Demographics						
Income	-.133	.044	9.33	.002	.875	.804-.953
Level of thought	.269	.078	11.78	.001	1.31	1.12-11.52
Relationship variables						
Perceived Costs	.425	.164	6.70	.010	1.53	1.11-2.11
Dog Owner Interaction	.692	.157	19.38	.001	2.00	1.47-2.72
Attitudes variables						
Training should be the law	.245	.084	8.53	.003	1.28	1.08-1.51
Training promotes the relationship between a dog and its owner	.809	.188	18.49	.001	2.25	1.55-3.25

As can be seen in Table 6, participation in obedience training was more likely if owners believed that training promotes the relationship between an owner and their dog. The Dog Owner Interaction subscale from the MDORS was also related to training, indicating that the more frequently owners engaged in activities with their dog the more likely they attended obedience training. Interestingly, level of income was a significant predictor of participation in training, but dog owners with lower levels of income were more likely to have attended formal obedience training than owners with higher household levels of income. This may reflect reduced registration fees offered in some areas for obedience trained dogs, consistent with the finding that owners who perceived greater costs to be associated with owning a dog were more likely to have taken their dog to training. Again, however, it is possible that people who own dogs responsibly, complying with a range of responsible ownership behaviours, are more aware of, and realistic about, the responsibilities and costs associated with dog ownership. Consistent with this possibility, participation in training was also predicted by the belief that training should be a legal responsibility. These results suggest that campaigns seeking to promote training should focus on its being associated with responsible ownership practices. In addition, the benefits that training provides to the individual owner, including promotion of the dog-owner relationship and facilitation of dog owner interactions, should be emphasised.

Socialisation

Step 1 of SLR revealed that demographic variables were significantly related to socialisation ($X^2 = 41.48$, $df = 15$, $p = 0.001$). Step 2 of the model revealed that the addition of attitudinal and relationship variables significantly improved the model ($X^2 = 175.91$, $df = 14$, $p = 0.001$). Table 7 presents the results of Step 2, showing that four variables predicted socialisation compliance.

Table 7: Sequential logistic regression analysis of socialisation as a function of demographics, relationship and attitudinal variables

Variables	B	SE	Wald	*p*	OR	CI
Demographics						
Dog age	-.108	.031	12.20	.001	.898	.845-.954
Relationship variable						
Dog Owner Interaction	.818	.220	13.83	.001	2.27	1.47-3.49
Attitudinal variables						
Socialisation is difficult	-.934	.131	50.72	.001	.393	.304-.508
Socialisation is practice that my friends and family would agree with	.732	.186	15.54	.001	2.08	1.44-2.99

As can be seen in table 7, socialisation was more likely for dog owners that scored higher on the Dog Owner Interaction relationship subscale of the MDORS. Those who reported that socialisation was difficult were less likely to regularly socialise their dog. There are a number of reasons why socialisation may be perceived as difficult. Some owners may lack access to areas where they can safely socialise their dog. Australia has a widespread policy of not permitting dogs in many public places, including many forms of public transport, restaurants, sporting venues and motels. Other owners may lack sufficient time, find socialisation difficult because of their dog's behaviour, or lack support from family and friends who could act to increase socialisation opportunities. In our sample younger dogs were more likely to be regularly socialised than older dogs. Owners may become complacent about socialisation as their dog ages, perhaps because they believe that socialisation need occur only when a dog is in its formative years. If lifelong socialisation is to be increased, education campaigns need to communicate the benefits of socialisation for dogs of all ages and the benefits for owners of having a well socialised dog. Campaigns should also identify ways that owners can safely and easily socialise their dogs, perhaps by identifying dog friendly cafés, parks and other public areas.

Conclusion

Overall, these results indicate that, in our sample of highly motivated and responsible dog owners, various attitudes and aspects of the relationship between dog and owner were associated with responsible management behaviours. One finding of note is that many responsible dog ownership behaviours were associated with the degree to which owners reported engaging in activities with their pet. Promoting such activities may therefore provide a means of encouraging responsible ownership, arguing against a tendency in Australia to exclude even very well behaved dogs from many public places. Also of note is the extent to which normative pressure (perceived approval or disapproval from family and friends) appears to promote the performance of many management behaviours. The study was limited in that the respondents in the sample were self-selected. The results may therefore reflect the views of those owners who are more likely than others to engage in responsible behaviours. While this means that caution should be exercised when generalising from these results to other populations, it is instructive that several of the behaviours targeted were significantly predicted by the participants' beliefs about what their friends and family would think. This suggests that educational campaigns targeting the general population may have both a direct effect on owners who are already enthusiastic about engaging in responsible behaviours, and also an indirect effect by increasing social pressure on those who are less likely to engage in such behaviours voluntarily.

References

Anderson, W. P., Reid, C. M., & Jennings, G. L. (1992), Pet ownership and risk factors for cardiovascular disease. *Medical Journal of Australia, 157*: 298–301

Bennett, P. C., & Rohlf, V. I. (2007), Owner-companion dog interactions: Relationships between demographic variables, potentially problematic behaviours, training engagement and shared activities. *Applied Animal Behaviour Science, 102*:65–84

Cutt, H. E., Knuiman, M. W., & Giles-Corti, B. (2008), Does getting a dog increase recreational walking? *International Journal of Behavioral Nutrition and Physical Activity, 5*:17

Dwyer, F., Bennett, P. C., & Coleman, G. C. (2006), Development of the Monash Dog Owner Relationship Scale (MDORS). *Anthrozoos, 19*(3):243–256.

Heady, B. (2006), National people and pets survey. Socially responsible pet ownership in Australia: A decade of progress.: Petcare Information and Advisory Service Australia Pty Ltd

Kayrooz, C., Dalton, C., Colavecchio, F., & Hibberson, C. (2003), Barking dogs and neighbourhood disputes. *Australian Dispute Resolution Journal 14*(1):71–80

Lord, L. K., Wittum, T. E., Feretich, A. K., Funk, J. A., & Rajala-Shultz, P. J. (2007), Search and identification methods that owners use to find a lost dog. *Journal of the American Veterinary Medical Association, 230*:211–216

Marston, L., Bennett, P. C., & Coleman, G. C. (2004), What happens to shelter dogs? An analysis of data for 1 year from three Australian shelters. *Journal of Applied Animal Welfare Science, 7*(1):27–47

McMillan, B., & Conner, M. (2003), Using the theory of planned behaviour to understand alcohol and tobacco use in students. *Psychology, Health and Medicine, 8*(3): 317–328

Rohlf, V. I., Bennett, P. C., Toukhsati, S. R., & Coleman, G. C. (2009), Manusrcipt submitted for publication

Tabachnick, B. G., & Fidell, L. S. (2008), *Using Multivariate Statistics* (5th ed.). Boston: Pearson Education, Inc

Wood, L., Giles-Corti, B., & Bulsara, M. (2005), The pet connection: Pets as a conduit for social capital? *Social Science & Medicine, 61*(6):1159–1173

About the author

Vanessa Rohlf, a former Veterinary Nurse, is a PhD candidate studying relationships between owner attitudes and their behaviours towards dogs. She also lectures and tutors Psychology at Monash University Gippsland.