Attitude toward non-human animals and their welfare: do behaviorists differ from other veterinarians?

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Abstract

Veterinarians are an important source of information about animal care for owners. They provide general advice about topics important to an animal’s well-being, such as appropriate training, exercise and nutrition. Veterinary behaviorists, when dealing with undesired or abnormal behaviors, also perform an assessment of pet welfare and an evaluation of owners’ behavior and attitudes. It is likely that these assessments are affected by the attitude toward animals and toward animal welfare of the behaviorists.

The aim of this study was to investigate whether veterinary behaviorists have a different attitude toward animals and animal welfare compared to other veterinarians. An online questionnaire, also including the 20-item Animal Attitude Scale, was completed by a convenience sample of 540 Italian veterinarians dealing with companion animals: 140 were behaviorists, 22 were starting to work in the field of behavioral medicine, and 378 were not involved in it. Veterinary behaviorists showed a more positive attitude toward non-human animals and their welfare, which seems to be more related to the interest in behavioral medicine than to its practice. Moreover, behaviorists attached more importance to the psychological aspects of pet welfare that they perceived as less protected in their feline and canine patients. These findings suggest that being involved in one discipline or another of veterinary medicine do matter in the attitude toward non-human animals and their welfare.

Keywords: animal welfare; attitude; behaviorist; behavioral medicine; questionnaire; veterinarians.
Introduction

Human attitudes toward animals are becoming of increasing importance in the areas of conservation and welfare. Indeed, attitude can be defined as a feeling or an opinion about something or someone, or a way of behaving that is caused by this (Cambridge Dictionary). This means that, when investigating opinions or feelings about something, the way that individual is likely to act in a certain situation is also indirectly investigated.

Veterinarians are an important source of information about animal care for owners, providing general advice about topics that are important to an animal’s well-being, such as appropriate training, exercise and nutrition (Dawson et al., 2016), as well as specific advice on behavioral issues (Gazzano et al., 2008; 2015). Veterinarians and behaviorists can help owners by teaching them to look at the whole body language of the animal, and to properly assess (and possibly intervene in) their welfare (Mariti et al., 2012; 2015). Indeed, veterinarians have the obligation to ensure their patients’ welfare (Yeates, 2012). However, veterinarians have responsibilities to many parties, for instance they have responsibilities to themselves, animals, clients, colleagues, people they work with, and the community in which they live. The perception of more responsibility to any of these may cause differences in attitudes and behaviors (Ozen et al., 2004). Teaching veterinary ethics can represent a useful tool for the promotion of an appropriate attitude to animals, clients, and other parties (Thornton et al., 2001).

Among the different branches of veterinary medicine, behavioral medicine is a relatively new one. Its practice focuses on the diagnosis and treatment of pet behavioral problems. It also implies the assessment of pet welfare and a very broad approach to problems, including an evaluation of owners’ behavior and attitudes, as usually the owner is the key for the diagnosis and the treatment of behavioral problems. It is likely
that these assessments are affected by the attitude toward animals and toward animal welfare of the behaviorists themselves.

The aim of this study was to investigate whether veterinary behaviorists have a different attitude toward non-human animals and their welfare compared to other veterinarians.

**Materials and Methods**

**Protocol**

The study consisted in an online survey. Participants were recruited using social networks and mailing lists available to the authors. The inclusion criteria for participating were: being a veterinarian working in Italy and working mainly or exclusively with companion animals (i.e. dogs and cats).

The questionnaire (reported in annex 1) was composed of items regarding respondents’ personal data as well as their opinion on the welfare of pet species. In detail, participants were asked to rate which was, in their opinion, the importance of each of the Five Freedoms for the welfare of pet species. Participants were also asked the level of protection they perceived for each of the Five Freedoms in their own feline and canine patients. In both cases, answers were transformed in a 5-point-Likert scale. The questionnaire also included the 20-item Animal Attitude Scale. The Animal Attitude Scale (AAS) is a validated scale originally published by Herzog et al. (1990) to assess people attitudes toward non-human animals. The original English version has been back-translated into Italian by two people mastering English, one being an expert in animal behavior and welfare and one not involved in the field. In order to make the scale more suitable to our context and aim, the scale was slightly amended with the author’s (Herzog) permission. The word ‘cock-fighting’ was substituted with ‘dog-fighting’; and respondents were asked about their opinion on the use of frogs, instead of
cats, for educational dissection. In the AAS answers were transformed in a 5-point-Likert scale, and the score of questions assessing a negative attitude toward non-human animals was inverted. The total score for AAS was calculated by summing the score obtained for single items.

Herzog et al. (2015) suggested that it is possible to categorize the items of the AAS according to the issue they deal with, and then to group similar items in order to create thematic subscales. For the current study, the following subscales were created: attitude toward Dogs, Food, Research, and Human Moral Dominance (see annex 1). For each subscale, the corresponding score was calculated by summing the score obtained by respondents for each item belonging to that subscale.

**Participants**

A convenience sample of 540 Italian veterinarians working with companion animals participated at the study. The whole sample was composed by the following sub-samples: 1) a group of 140 veterinary behaviorists (VB, recognized as experts in animal behavior by FNOVI, Italian Federation of Veterinarians Registers); 2) a group of 22 veterinarians who were not experts in animal behavior (VNE, they had attended only short courses about behavioral medicine or had not finished an institutional course yet), but they had already started running some consultations; and 3) a group of 378 veterinarians working with other branches of veterinary medicine (VOD, veterinarians other disciplines). These three groups were as matched as possible for relevant factors, such as the age, the year of graduation, the gender, and the context where they were working (Table 1). It was also checked that the participants of all groups were coming from throughout Italy, including areas from the South, Center and North of the Country.
The comparison between VNE, VB and VOD was used to test if the practice of behavioral medicine or the interest in it was related to a different attitude toward non-human animals.

In order to get a better picture of the attitude toward animals in the world of veterinary medicine, and to test if behavioral medicine had special features leading to a different attitude toward non-human animals, veterinarians were further distinguished in smaller groups according to the field they were more involved in. The group of VOD was distinguished in one sub-group called internists (VI, veterinarians who visit animals, interact with them and do overall assessments on the health state of the animals, n=346) and one sub-group called surgeons and anaesthesists (VSA, veterinarians who have a more restricted target and more limited interactions with their patients, i.e. those who mainly work with animals under anesthesia, n=32).

**Statistical analysis**

Answers provided by different groups of veterinarians were compared using the Kruskal-Wallis and then the Mann-Whitney U test (P < 0.05; multiple comparison corrections were performed using the Benjamini-Hochberg procedure) run with the software SPSS Statistic 17.0 (Chicago, IL).

**Results**

Data and results of the statistical analysis comparing AAS total score and subscales scores are reported in table 2.

Looking at the total score of the Animal Attitude Scale, VB obtained a significantly higher total score compared to VOD, meaning that they had a more positive attitude toward non-human animals and their welfare (Figure 1). The AAS total score was
statistically higher for VB compared to VI, and it was higher for VI compared to VSA. In addition, non-experts practicing behavioral medicine (VNE) showed a higher AAS total score compared to VOD, as well as compared to VB.

The statistical analysis also revealed that VB obtained statistically higher scores than VOD for most of the sub-scales, i.e. for the sub-scales on Research, Food, and Human Moral Dominance. However, no difference was found for the sub-scale on Dogs (Figure 2).

The same trend was observed for deeper analyses. VB obtained higher scores than VI and VSA for the sub-scales on Research, Food and Human Moral Dominance, but not for the Dog sub-scale. In addition, VI obtained higher scores than VSA the sub-scales on Research, Food and Human Moral Dominance, but not for the Dog sub-scale.

VNE showed a more positive attitude for all the sub-scales, including that dealing with dogs, when compared to both VOD and VB. Only subscale on Food was not statistically different for VNE and VB, although the difference was remarkable (p=0.059).

Statistical analysis revealed that VB and VOD did not differ in the importance they attached to the physical aspects of animal welfare: hunger and thirst (medians: 5.00 versus 5.00; min-max range: 2-5 versus 1-5; U = 26052.0, P = 0.137); pain, injury and disease (medians: 5.00 versus 5.00; min-max range: 2-5 versus 1-5; U = 25972.0, P = 0.106). However, VB compared to VOD attached more importance to the freedoms related to psychological aspects: the freedom to express normal behavior (medians: 5.00 versus 5.00; min-max range: 3-5 versus 1-5; U = 20816.0, P < 0.01) and the freedom from fear and distress (medians: 5.00 versus 5.00; min-max range: 3-5 versus 1-5; U = 22275.5, P < 0.01). Behaviorists also attached more importance to the freedom from discomfort, which leads on to both physical and psychological aspects (medians: 5.00 versus 5.00; min-max range: 2-5 versus 1-5; U = 23336.0; P = 0.01).
VB considered the freedom to express normal behavior (medians: 2.00 versus 2.00; min-max range: 1-5 versus 1-5; U = 22872.5; P < 0.01) and the freedom from fear and distress (medians: 2.00 versus 3.00; min-max range: 1-5 versus 1-5; U = 21678.0; P < 0.01) as less guaranteed to companion animals. However, the trend was inverted for the freedom from hunger and thirst (medians: 4.00 versus 3.00; min-max range: 2-5 versus 2-5; U = 23790.5; P = 0.005), and the freedom from pain, injury and disease (medians: 4.00 versus 3.00; min-max range: 2-5 versus 2-5; U = 23447.5; P = 0.002), that were considered less guaranteed to their patients by VOD. No difference was observed for the freedom from discomfort (medians: 3.00 versus 3.00; min-max range: 2-5 versus 1-5; U = 26625.00; P = 0.383).

**Discussion**

Research has widely investigated the factors that can affect human attitude toward animals. For example, the gender has been repeatedly found to impact on the empathy toward animals, with women being more empathetic to non-human animals and obtaining higher scores in the Animal Attitude Scale (Herzog et al., 1990; Mazas et al., 2013; Herzog, 2015). In the field of veterinary medicine, both students (Serpell, 2005) and professionals (Ostović et al., 2016; Colombo et al., 2017) were found to be influenced in their attitude toward non-human animals by factors such as the gender and previous experiences with animals. However, until now veterinarians have been investigated as a whole professional category, and scant attention has been reserved to the category of veterinarians who are mostly involved in the assessment of pet behaviour and welfare.

In the current study, veterinary behaviorists have shown a more positive attitude toward non-human animals and animal welfare compared to veterinarians with different kinds
of specialization, regardless of the fact that the other veterinarians were grouped
together or assessed as smaller groups (only internists or only surgeons and
anaesthesists). It was also found that internists obtained higher AAS scores compared to
surgeons and anaesthesists, suggesting that a higher interaction with animal patients or a
higher attention paid to overall assessments of non-human animals may be related to a
more positive attitude toward them and their welfare. However, veterinary behaviorists
were found to have a more positive attitude than internists. This may be the
consequence of practicing behavioral medicine or it may be the cause of turning a
veterinarian into a behaviorist. The latter seems to be more likely, considering that the
current study also found that non-experts practicing behavioral medicine had a more
positive attitude, including a better attitude toward dogs, when compared to other
veterinarians and to behaviorists. These findings should be interpreted cautiously, due to
the limited number of participants (especially in the group of non-experts in animal
behavior) and to the large number of factors that may affect attitude toward non-human
animals. However, such data suggest that people interested in behavioral medicine have
an overall positive attitude toward animals which is not developed through the practice
of behavioral medicine. Indeed, it seems that this attitude tends to become more
negative when veterinarians have practiced it for a certain time, as shown by the
difference between experts and non-experts in behavioral medicine. Therefore an a
priori factor, i.e. the interest in the field of animal behavior, is more likely to be
responsible for the better attitude toward non-human animals.

The lack of differences between behaviorists and other vets regarding dogs may be due
to the fact that dogs represented the most frequent visited species for both categories,
who are well-disposed and familiar to dogs.
Another topic covered by this survey is that of the Five Freedoms for animals (Council F. A. W., 2009). Although this list was originally prepared for the protection of welfare in farm animals, and its application is partially outdated, for the current study it was chosen to investigate on them for two main reasons: the Five Freedoms are the basis for the evaluation of animal welfare, susceptible to be applied also to companion animals; and most veterinarians are familiar with them.

Taken together, the findings of this study on the opinion about pet welfare suggest that behaviorists and other veterinarians have a very different perception and possibly a way of assessing the welfare of their own patients. Veterinary behaviorists considered the freedom to express normal behavior, as well as the freedom from fear and distress, more important (highly statistically significant) for pet species and less protected for the welfare of their own patients. In other words, behaviorists attached more importance to the psychological aspects of pet welfare compared to other veterinarians. Veterinary behaviorists also considered the freedom from discomfort, which leads on to both physical and psychological aspects, more important but equally protected compared to other vets’ opinion. On the contrary, veterinarians working in disciplines other than behavioral medicine considered the freedoms related to physical aspects (freedom from hunger and thirst, and freedom from pain, injury and disease) as less guaranteed to their patients. It would be interesting to investigate whether behaviorists and other vets differ also on specific issues related to dog welfare and health, such as disorders of pedigree dogs that have been found to concern veterinarians (Farrow et al., 2014).

The above mentioned differences are unlikely due to the different patients the two groups of veterinarians deal with, as probably there is a huge overlap in the population of patients visited by the two groups of veterinarians. In fact, pets brought to a behavioral consultation are also led to the general veterinarian, who have the
opportunity to visit the same dogs or cats with low welfare and low levels of protection. In addition, almost all the veterinary behaviorists of the sample were also practicing other branches of veterinary medicine, so their patients were not limited to those with behavioral problems. A possible explanation for the different perception of pets welfare, and in particular the higher attention paid by behaviorists to the psychological aspects of welfare, is the higher interest for animal behavior or the higher knowledge about it they have compared to their colleagues. It is likely that behaviorists are more able to recognize signs of stress compared to other veterinarians, who may miss subtle signs due to the lack of teaching in veterinary schools (Mariti et al., 2012; 2015). However, another possible explanation, that does not exclude the previous ones, is that the more positive attitude toward animals found with the AAS is responsible for a higher empathy and therefore a higher concern about pets’ welfare.

Although the correlation between attitude and behavior can be affected by many factors, such as affective and cognitive ones (Millar and Tesser, 1990), the different perception here observed may lead non-behaviorist vets to be less focused on improving the psychological aspects of their patients’ welfare, and probably on advising clients on the provisions they can apply. This has a strong impact on the welfare of dogs and cats, who have more chances to visit a general veterinarian rather than a behaviorist. It would be relevant for pet welfare that general veterinarians had a positive attitude toward animal welfare and that they were well versed in the assessment of pet welfare. Recent studies have indeed demonstrated that dogs (Mariti et al., 2016) and cats (Mariti et al., 2017) are really stressed in all phases related to visiting a veterinary clinic and that veterinarians sometimes do not behave appropriately to reduce the level of stress of their canine and feline patients. Veterinarians need to ensure that clients are able to discuss behavior issues and are provided with appropriate support (Roshier & McBride,
254 The clinic may offer a behavioral service to clients, which is important for pet
255 welfare and also for the guardian’s satisfaction (Herron & Lord, 2012).
256 The relatively high number of respondents and the presence of a wide range of
257 specializations, origin or age, makes the sample likely to be representative of the larger
258 population of Italian companion animals’ veterinarians. Nevertheless, a potential
259 limitation of the study must be stressed. Volunteer bias is often a limitation in survey-
260 based research. Using an online survey with a title including the words “animal
261 behavior and welfare” may have selected those veterinarians who were more interested
262 in these topics. However, the inclusion of non-behaviorist vets with a lower interest in
263 animal behavior and welfare would have probably led to even greater differences.
264 The findings of the current study suggest that being involved in one discipline or
265 another of veterinary medicine do matter, but probably there is an a priori difference,
266 i.e. the interest in behavioral medicine is linked to having a more positive attitude
267 toward non-human animals. The practice itself may actually reduce this positive attitude
268 over time, that is unlikely due to length of service (Colombo et al., 2017). Reasons for
269 this change in attitude can be numerous. The practice of behavioral medicine can be
270 very stressful, and it can favor professional burnout (da Graça Pereira et al., 2015;
271 Caverni et al., 2016). The inability to cope with behavioral cases or their failure might
272 be responsible for a sort of detachment, of aloofness from non-human animals.
273 Although degrees of detachment and equanimity are essential if the clinician is not to be
274 overwhelmed by the feeling state of the patient, their exaggeration can be detrimental
275 and needs to be addressed (Post et al., 2014).
276
277 Conclusions
Veterinary behaviorists showed more concern for animal welfare issues than did other veterinarians both in terms of importance given to the Five Freedoms for the welfare of pet animals and in human sensitivity to animal use. This may be linked to the more positive attitude toward non-human animals and their welfare shown by behaviorists.

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Author contributions: A.G., S.G. and C.M. participated in the study design. S.G., A.O. and C.M. were responsible for data collection. A.G. and C.M. performed the statistical analysis. C.M., J.G. and A.O. interpreted the data and drafted the manuscript. All authors revised the manuscript and have read and approved the final manuscript.

Ethical considerations

Under the requirements of the host institution this study did not require ethical approval. However, the online form to be filled in included an introduction with the general topic covered by the study and the consent of respondent for using data for research purposes under the Italian law on privacy.

Conflict of interest

The authors declare no conflict of interest.

References


Figure 1: Total scores for the Animal Attitude Score obtained by all investigated categories of veterinarians: veterinary behaviourists (VB), veterinarians involved in other disciplines (VOD), veterinary internists (VI), veterinarians involved in surgery and anesthesia (VSA), and veterinarians interested in behavioral medicine but not recognized experts in animal behavior (VNE).

Figure 2: Scores obtained for the four AAS sub-scales (attitude towards Dogs, Food, Research and Human Moral Dominance) by all the investigated categories of veterinarians: veterinary behaviorists (VB), veterinarians involved in other disciplines (VOD), veterinary internists (VI), veterinarians involved in surgery and anesthesia (VSA), and veterinarians interested in behavioral medicine but not recognized experts in animal behavior (VNE).