Environmental methods used by veterinary centres to reduce stress of cats and dogs during practice visits

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Abstract:

Aim: The veterinary practice can be a stressful environment for pets. The stress animals experience when visiting the practice can impact on health, welfare and the likelihood of owners regularly visiting the practice. A number of different approaches have been suggested to be beneficial in reducing stress at the veterinary practice however the methods that practices use to try and reduce stress in animals during veterinary visits, and the reasons for the use of these approaches has not been determined.

Method: Veterinary practices in the UK (n=45) completed an online mixed methods questionnaire providing information on the practice's use of separate waiting rooms, treat feeding, rehearsal visits, correct handling of animals, appeasing pheromones and sensory enrichment. The reasons why these approaches were or were not used, and the participants' views on whether these practices reduced stress during veterinary visits was also determined.

Results: The majority of practices surveyed fed treats to animals during veterinary visits, offered rehearsal visits to animals and their owners, used appeasing pheromones in the practice and stated that they used correct handling techniques for different species during consultations. In addition, the majority of practices surveyed did not have more than one waiting room or use a television or auditory device to try and reduce stress in animals during veterinary visits. The majority of participants

believed that separate waiting rooms, rehearsal visits, treat feeding, appeasing pheromones, sensory enrichment and correct handling can reduce stress in animals during veterinary visits.

Conclusion: A range of methods are used by veterinary practices within the UK to attempt to reduce stress in animals during veterinary visits. Greater consideration of methods to facilitate separation of species where distinct waiting rooms are not feasible, for example via implementing appointments for cats and dogs on different days and times, would be beneficial. In addition, veterinary staff should consider utilizing classical or specially designed species-specific music in the veterinary practice as this may help mitigate the stress of cats and dogs visiting the practice.

Key words: Stress reduction, appeasing pheromones, waiting rooms, calming music, veterinary practice

Key points:

- The majority of practices fed treats to animals during veterinary visits and offered rehearsal visits to animals and their owners.
- Most practices used appeasing pheromones and stated that they used correct handling techniques for different species.
- The majority of practices do not have more than one waiting room or use a television or auditory device to try and reduce stress in animals during veterinary visits.
- Practices could consider utilizing classical music in the veterinary centre and methods to help separate species where distinct waiting rooms are not possible.

Introduction:

The veterinary practice can be highly stressful for animals due to the unfamiliar surroundings, unfamiliar conspecifics and heterospecifics and association with past aversive experiences (Mariti et al, 2015; Mariti et al, 2016; Lloyd 2017). Dogs and cats display distress and fearful behaviours during veterinary practice visits (e.g. Döring et al, 2009; Mariti et al, 2015; Mariti et al, 2016). Stress is evident in dogs and cats at all stages of veterinary visits including entering the practice, in the waiting room, in the consultation room and on the treatment table (Stanford, 1981; Döring et al, 2009; Mariti et al, 2015; Mariti et al, 2016).

The stress experienced by animals at veterinary practices is a concern both in terms of animal health and welfare (Moberg and Mench, 2000; Lloyd 2017), as well as if owners avoid bringing their pets into practices to try and minimize this distress (Volk et al, 2011). Furthermore, 97% of surveyed veterinarians believe that reducing stress of animals during visits would lead to increased visits to the practice (DVM 360,

2014). It is therefore important that veterinary centres try to implement strategies to minimize the stress of animals when visiting the practice.

There are many different approaches that have been proposed to be beneficial to reduce stress at the veterinary practice. These include having separate waiting rooms for different species (Rodan et al, 2011; Montrose et al, 2016), rehearsal visits to familiarise animals with staff members and the practice environment (Moffat, 2008; Rodan et al, 2011) and correct handling using nonaversive techniques and minimal restraint (Anseeuw et al, 2006; Herron and Shreyer, 2014; Lloyd, 2017). Other strategies include treat feeding to help condition animals to view visiting the practice more positively (Herron and Shreyer, 2014; Westlund, 2015) and use of appeasing pheromones with the aim of providing comfort and reducing anxiety (Mills et al, 2006; Kim et al, 2010; Pereira et al, 2015). In addition, use of sensory enrichment such as classical music can reduce stress in animals (Wells et al, 2009; Kogan et al, 2012; Bowman et al, 2015). Although it is commonly accepted that veterinary practices can be stressful environments for pets, there has been little study of the methods that practices use to try and reduce stress in animals and their reasons for the use of these approaches. DVM360 magazine (2014) conducted a survey of fear free methods used by US veterinarians, however did not explore their perceptions of the methods or their reasons for their use. There has also been no study to our knowledge of the methods used by practices to reduce stress in animals within the UK. The aim of this study was therefore to determine what methods veterinary practices in the UK use to try to reduce stress in animals during veterinary visits. In addition, a further objective was to garner the views of veterinary staff on whether these practices reduced stress during veterinary visits.

Methods:

Participant recruitment:

An online open-access questionnaire was promoted on the social media websites Twitter™ and Facebook™. The questionnaire was targeted at those working in veterinary practices with promotion via veterinary specific social media pages and accounts. The questionnaire was promoted on Twitter by accounts followed by veterinary professionals such as The Veterinary Times (vettimesUK), the veterinary nurse journal (TheVetNurseJnl) and RVC Veterinary nurses (RVCVN). The questionnaire was also advertised in veterinary nurse specific groups on Facebook. In addition the questionnaire was sent to a convenience sample of veterinary practices via personal email communications. The questionnaire was available for completion from January to March 2018. Participants were required to work at a veterinary practice as a veterinary professional (e.g. veterinarian, veterinary nurse), be based in the UK and be 18 years or over to complete the questionnaire. Participants were excluded if not working in a small or mixed animal practice. Participants provided informed consent, all information collected was held securely and no personal identifying data were collected. The name of the practice was collected as part of the questionnaire in order to avoid potential duplication of data within the results, however post this all information obtained from the practices was anonymized.

Questionnaire design:
A mixed methods approach comprising quantitative and qualitative methods was used to investigate the methods used by veterinary centres to reduce stress of animals during practice visits. The survey comprised 40 questions, including both open and close-ended questions and Likert scale questions. The questionnaire consisted of six sections. The first section gathered demographic information on the type of veterinary practice (e.g. small animal practice; large animal practice, mixed animal practice or other) and the type of animals primarily treated at the practice. Information was also gathered on where the practice was located in the UK, whether it was a rural or urban practice and the name of the veterinary centre in order to avoid any duplicated practice results. Post this section, the questionnaire consisted of five sections focusing on the practice's use of separate waiting rooms, treat feeding, rehearsal visits, correct handling of animals, and appeasing pheromones and sensory enrichment. Information was gathered on whether the veterinary practice used each of these different approaches and the reasons why these approaches were or were not used. Where appropriate, additional information was also gathered on how these approaches were implemented in practice, for example, whether separate waiting rooms are used to separate stressed animals or different species, what species are separated in different waiting rooms, when and where treats would be fed in the practice, what species rehearsal visits were available for and where in the practice rehearsal visits took place, and brands of pheromone diffusers/sprays used. The participants' views on whether these practices reduced stress during veterinary visits was also assessed and they were asked to provide reasons for their answer.

Data analysis

Data were analysed using descriptive statistics. All statistical analysis was performed using Microsoft Excel (Microsoft Inc. 2016).

Results and Discussion:

Respondent profile:
Forty-nine veterinary practices completed the study. Three practices were excluded due to duplication of data in the results and one practice was excluded due to being a large animal practice which primarily treated horses. The large animal practice was excluded due to the limited data available for this type of practice precluding valid analysis. Of the remaining 45 practices, two were mixed animal practices and 43 were small animal practices. The mixed and small animal practices primarily treated cats and/or dogs. The majority of respondents were from England (n=40; 88.9%) with 11.1% (n=5) being based in Wales. Sixty-six point seven percent (n=30) of practices were located in an urban area while 31.1% (n=14) of practices were located in a rural area and 2.2% (n=1) in a semi-rural area.

Methods used to reduce stress in veterinary practices:

Separate waiting rooms:
Eighty percent (n=36) of the veterinary practices did not have more than one waiting room with only 20.0% (n=9) of the practices having multiple waiting rooms (Figure 1). Sixty one point one percent (n=22) of practices without separate waiting rooms stated that they did not have more than one waiting room due to there not being enough space. Another reason that this approach was not used was that instead the practice had one large waiting room split into different sections (16.7%; n=6). Where practices had separate waiting rooms they all stated that they used this approach to allow separation of different species (100%; n=9). The species separated were cats and dogs (55.6%; n=5), or cats/dogs and exotics (44.4%; n=4). The majority of respondents strongly agreed (60.0%; n=27) or agreed (35.6%; n=16) that separate waiting rooms can reduce stress in animals during veterinary visits. The reasons for this opinion were also explored via an open question. Similar themes emerged related to wanting to keep cats separate from dogs to reduce fear in cats, and wanting to separate predator and prey species to reduce stress.

Separate waiting rooms are proposed to be beneficial to mitigate the stress of animals when visiting the practice (Rodan et al, 2011; Montrose et al, 2016). The majority of practices believed that separate waiting rooms were of value however unfortunately this was not reflected in the practices' use of waiting rooms. This tended to be due to space restrictions. A number of practices utilized split sections in a large waiting room which may help prevent stress caused by visual contact, however is likely to do little to mitigate stress due to olfactory stimuli and auditory stimuli, such as from barking dogs. While consideration of separate waiting rooms would be valuable when designing or setting up new practices, this is logistically challenging for many existing practices. These practices could consider implementing appointments for cats and dogs on different days and times, or cat appointments during quieter periods of the day to help minimize stress during visits (Rodan et al, 2011).

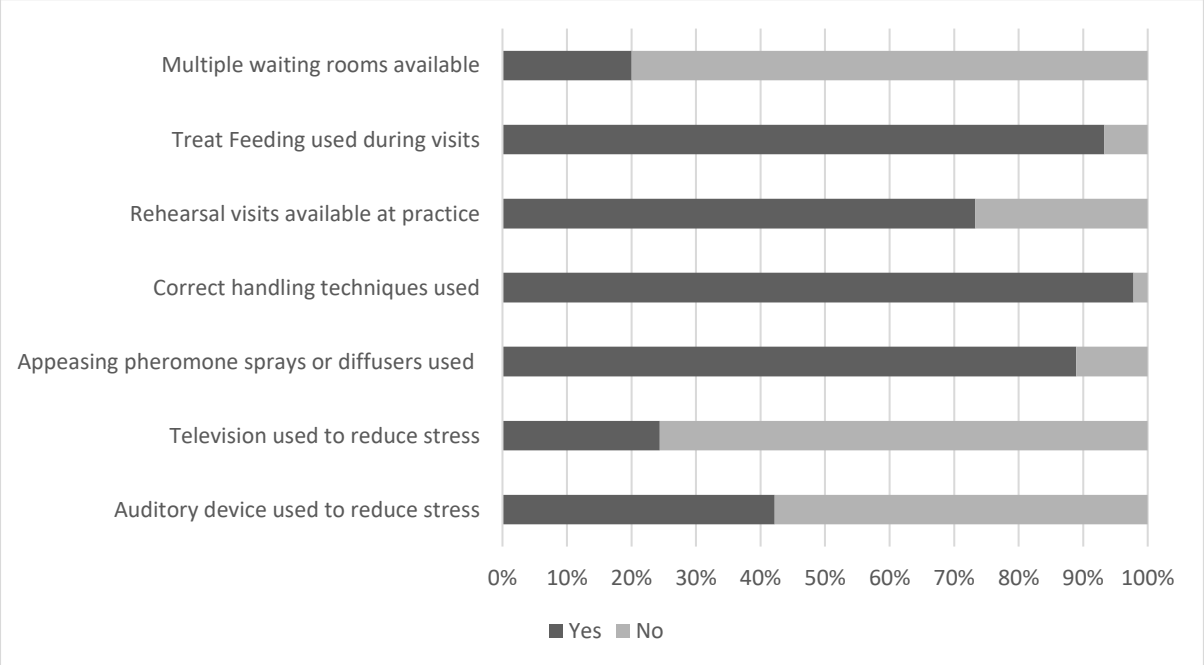

Figure 1: Use of environmental methods by veterinary centres to reduce stress during practice visits

Treat feeding:
Ninety-three point three percent (n=42) of the veterinary practices fed treats to animals during visits while 6.7% (n=3) of practices did not utilize treat feeding (Figure 1). Various reasons were suggested for why treat feeding was used with the majority of practices using treat feeding to make visiting the practice a more positive or enjoyable experience for animals. Of the practices that fed treats, 97.6% (n=41) stated that they would discuss treat feeding with the owner first. Seventy one point four percent of the practices utilizing treat feeding (n=30) fed animals treats in the waiting room to reduce stress. In addition, 85.7% (n=36) of practices fed treats during examination and 92.9% (n=39) of practices fed treats during consultation to reduce the stress of animals during veterinary visits. The majority of respondents strongly agreed (37.8%; n=17) or agreed (46.7%; n=21) that treat feeding can reduce stress in animals when visiting the veterinary centre. When the reasons for this opinion were explored via an open question, themes were evident relating to rewarding the animals, making visiting the vets a positive experience for animals and distracting the animal from the consultation and examination.

Treat feeding can be valuable to alleviate stress in animals and condition pets to view visiting the practice as a positive experience (Herron and Shreyer, 2014; Westlund, 2015). A past survey of veterinary staff indicated that treat feeding seldom occurred with only 33% of practices regularly offering pets treats during visits (DVM 360, 2014). It is therefore promising to see that the majority of practices in our survey used treat feeding during all stages of the visits and also believed that this could reduce stress in animals when visiting the practice.

***Rehearsal visits*:**
Seventy three point three percent (n=33) of the veterinary practices had rehearsal visits available for animals and their owners at the practice whilst 26.7% (n=12) of practices did not have rehearsal visits (Figure 1). Where rehearsal visits occurred reasons for this included helping the animals become familiar with visiting the practice. There was also a focus evident on ensuring rehearsal visits were positive experiences for the animals. Where rehearsal visits were used by practices, they tended to be available for both cats and dogs (60.6%; n=20) or only dogs (30.3%; n=10) with lesser numbers of practices offering this service to only cats (3.0%, n=1) or all animals (6.1%, n=2). These rehearsal visits tended to utilize both the waiting room and consultation room (72.7%; n=24) though a lesser number utilized the waiting room (15.2%; n=5) or the consultation room (6.1%; n=2). The majority of respondents strongly agreed (37.8%; n=17) or agreed (35.6%; n=16) that rehearsal visits can reduce stress in animals during veterinary visits. The reasons for this opinion tended to relate to these visits helping develop positive associations and reduce fear in these animals.

Rehearsal visits can be beneficial to reduce stress in animals during veterinary visits by helping familiarise animals with staff members and the practice environment (Moffat, 2008; Rodan et al, 2011). The majority of the practices surveyed had rehearsal visits available for cats and dogs and believed these visits reduced stress in animals. These findings are promising however it would also be useful to identify

how well owners engage with these visits as if uptake is poor this is a concern. Further study would be beneficial to identify the uptake and occurrence of rehearsal visits, and how this varies between species. It could be suggested that cat owners may show less uptake of rehearsal visits due to concerns regarding the stress associated with putting their pets in the cat carrier and transporting them to the practice (Volk et al, 2011; Mariti et al, 2016).

***Correct handling*:**
Ninety seven point eight percent (n=44) of practices stated that they used correct handling techniques for different species during consultations (Figure 1). The majority of respondents strongly agreed (75.6%; n=34) or agreed (22.2%; n=10) that correct handling can reduce stress in animals during veterinary visits. The reasons for this opinion were also explored via an open question. Themes emerged relating to appropriate handling being important to mitigate stress and discomfort and avoid negative experiences for the animals.

Appropriate handling with minimal restraint can help reduce stress in animals during practice visits (Anseeuw et al, 2006; Herron and Shreyer, 2014; Lloyd, 2017). While the majority of practices surveyed stated that they used the correct handling techniques and believed that correct handling can reduce stress in animals, one limitation with this is that while participants may believe that they are handling animals appropriately this may not actually be the case. Concerns have also been raised that there can be a tendency in veterinary practice to over-restrain animals (Herron and Shreyer, 2014). This is difficult to assess within the constraints of a questionnaire but further study would be beneficial to elucidate handling methods.

Use of appeasing pheromones:
Eighty eight point nine percent (n=40) of practices stated that they used appeasing pheromone sprays or diffusers in the practice, while 11.1% (n=5) of practices did not use appeasing pheromones on site (Figure 1). Of the practices using appeasing pheromones, 67.5% of practices (n=27) used cat appeasing pheromones, 12.5% (n=5) used dog appeasing pheromones and 10.0% (n=4) used both cat and dog appeasing pheromones. Ten percent of practices (n=4) stated that they used pet remedy, though it is worth noting that this is not an appeasing pheromone. Reasons for their use included wanting to calm and relax animals and their perceived efficacy. The majority of respondents strongly agreed (35.6%; n=16) or agreed (48.9%; n=22) that appeasing pheromones can reduce stress in animals during veterinary visits. The reason for this opinion tended to be due to believing appeasing pheromones can be beneficial to reduce stress, though more so for longer stays in practices than brief visits.

Our finding that the majority of practices used appeasing pheromone sprays or diffusers and believed that they reduce stress in animals when visiting the practice compares positively to a past survey of veterinary staff that found that only 34% used species-specific appeasing pheromones (DVM 360, 2014). However, it is important to note that concerns have been raised about whether much of the existing research actually indicates appeasing pheromones as being effective in reducing stress (Frank et al, 2010) and further study into the use and efficacy of appeasing pheromones in veterinary practice is warranted.

Use of sensory enrichment:
Twenty four point four percent (n=11) of practices had a television in the waiting room which was used as a way of reducing stress in animals during veterinary visits, while 75.6% of practices (n=34) did not have a television in their waiting room, or did not use it to try and alleviate stress (Figure 1). In addition, 42.2% (n=19) of practices used a radio or other auditory device to help reduce stress in animals during veterinary visits, while 57.8% (n=26) did not use auditory stimuli in this manner. Practices stated that they did not use this approach because they were not aware that music or television can reduce stress, did not have devices available or had concerns that the stimuli would add more noise to the practice. Where practices did use this approach this was because they felt that this helps calm animals and reduce stress and can also help distract animals. While the majority of participants agreed that use of music or television could reduce stress in animals during veterinary visits, a relatively large percentage were unsure on its use. Seventeen point eight percent (n=8) of practices strongly agreed, 37.8% (n=17) agreed, 35.6% (n=16) neither agreed or disagreed and 8.9% (n=4) disagreed that the use of music or television could reduce stress at the practice. The reasons for this opinion were also explored via an open question. Where participants felt that the use of music or television was efficacious this tended to be due to previous positive experience with their use, perceived calming effects or helping replicate the home environment. Where participants were unsure on their use, this was largely due to lack of experience with these approaches or not believing that there was research to support their use. Where participants disagreed with the use of music or television this was due to concerns about whether it would benefit animals or that it may cause more stress.

Visual and auditory enrichment were not widely used in the survey sample. In addition, while the majority of participants stated that use of music or television could reduce stress in animals during veterinary visits, a third of participants were unsure if these interventions were useful or not. While this is perhaps not overly problematic for the use of television which, though it has been suggested to have some benefits, does not seem of great interest to dogs and cats (Graham et al, 2005; Ellis and Wells, 2008), auditory enrichment has been suggested to reduce stress in dogs (Wells et al, 2002; Kogan et al, 2012; Bowman et al, 2015). Less support is evident for its use in cats (Stephens and Montrose, 2014) though cats do exhibit a preference for specially designed species-appropriate music (Snowdon et al, 2015). Low engagement with auditory enrichment has also been evident in other surveys, with only 4% of veterinarians regularly playing music composed for pets in their practice (DVM 360, 2014). In this study, reasons for not using these approaches tended to be due to ignorance about their potential benefits or concerns regarding adding more noise to the practice. The latter is an important concern however practices should consider the addition of auditory stimuli such as classical or species-appropriate music as this may have beneficial or auditory masking effects for some species. The use of music during consultations may also be advantageous as this can improve the satisfaction of pet owners with the veterinary practice visit (Engler and Bain, 2017).

Limitations:
While these findings are interesting and this is the first study, to the authors' knowledge, to systematically investigate the methods that veterinary practices use to try to reduce stress in animals during veterinary visits, it is important to note that the

study has several limitations. The sample size utilized in this study was limited with data from only forty-five practices being analysed. Sample recruitment can be an issue with questionnaires targeted at particular study populations (e.g. veterinary practices), however this may raise concerns when generalising conclusions from this study to veterinary practices across the UK. In addition, the study was disseminated primarily via social media which can encounter limitations in terms of engagement, access and self-selection bias (Wright, 2005). Another limitation of this study is that the majority of the practices who responded to the survey were located in England and methods used in practices may differ across the UK. Another limitation is that all the practices considered primarily treated cats and dogs. Different methods may be used to reduce stress during veterinary visits in exotic species. Further study using a larger sample of veterinary practices across the UK would be of value. In addition further study exploring veterinary practices in Europe or the US would be beneficial. Research into the prevalence and use of additional methods proposed to reduce stress in animals when visiting the veterinary practice such as recommending carrier training to clients, reducing noise in the practice (DVM 360, 2014) and olfactory enrichment via scents and pet remedy would also be beneficial. In addition, consideration of whether different methods are used to reduce stress in species such as rodents, rabbits and birds, as well as the views of veterinary staff on the efficacy of these methods would be of value.

Conclusion:

In conclusion, this study highlights that a range of environmental methods are used by veterinary practices within the UK to attempt to reduce stress in animals during veterinary visits. The majority of practices in the sample surveyed used treat feeding and appeasing pheromones, offered rehearsal visits and stated that they used correct handling. Most practices did not have more than one waiting room or use televisions or auditory devices to try and ameliorate visiting animals' stress. While logistic constraints may hinder the use of distinct waiting rooms, practices could consider other methods to promote separation of species such as implementing appointments for cats and dogs on different days and times. In addition, practices could consider greater use of auditory enrichment due to its potential benefits in reducing stress of animals and enhancing owner satisfaction with the visit.

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