Improving welfare of dogs in shelters through environmental enrichment

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Introduction

Environmental enrichment has been studied with increasing frequency for exotic species and laboratory animals, although little has been done for the thousands of dogs, which pass through welfare shelters each year. The three articles to be discussed address this issue from differing perspectives. Two examine ways of influencing behaviour to enhance re-homing prospects. The third focuses primarily on improving the welfare of the animals whilst resident in the shelter.

Discussion

The first two articles work on the premise that the most effective way of improving long-term welfare of dogs in rescue shelters is to ensure the animal is re-homed. Research by Wells and Hepper (2001) showed that visitors to an animal shelter view only 29% of dogs available, with those dogs closest to the entrance being more likely to attract attention. Wells (1996) noted that purchase choice was greatly influenced the behaviour of the dog.

Wells et al (2002a) examined environmental stimulation to reduce the incidence of detrimental behaviour. Each dog's behaviour was assessed based on position in their kennels, activity and the level of vocalisation, and correlated against their time of residency. A direct correlation was found between position in the kennel and length of time in the shelter. Animals that had been resident longer spent more time at the back of the kennel, more time resting or sitting and vocalised less than newer arrivals, behaviours. These responses reduce adoption chances. One limitation of this study was the inability to determine if these behaviours were the result of learned helplessness or adaptation to the environment. Additionally these behaviours may have resulted from maturation of the animal. This was discounted as animals of all age groups that had been held for similar lengths of time displayed comparable behaviours. This study found that while long periods of time did not directly affect the welfare of the shelter residents, it did so indirectly by encouraging behaviours that reduced their chances of being adopted. Moving the dog's bed to the front of the kennel encouraged the dog to spend more time at the front, increasing visibility. The addition of a toy made the kennel environment more appealing to visitors even when the dog displayed no interest in the toy, thus improving adoption chances. For long-term inmates, rotation of cages, towards the entrance to increase their exposure was also suggested.

Auditory stimulation for dogs in shelters is seen as a potential method to reduce stress. Wells et al, (2002b) developed five types of auditory stimulation to assess their effect on dogs. These were:
1. Control: Where dogs were not exposed to any additional auditory stimulation.
2. Human conversation: Where dogs were exposed to talkback radio.
3. Classical music: Dogs were exposed to a mixture of classical tracks.
4. Heavy metal music: Here the dogs were exposed to a variety of Metallica tracks.
5. Pop music: Dogs were exposed to a compilation album of modern music.

The results showed that auditory stimulation significantly influenced the behaviour of the kennelled dogs. Classical music resulted in more time resting and a significantly lower level of barking than any of the other stimuli. This implies that classical music may have a calming effect. Heavy metal music was the only other type of stimulation that resulted in a change in behaviour, with dogs becoming more agitated, spending longer periods standing and barking more often.The welfare of the animal may directly benefit from appropriate auditory stimulation. The environment of a shelter can be extremely stressful and overly stimulating, if classical music can reduce stress levels and enhance relaxation it may be beneficial to welfare. Conversely inappropriate auditory stimulation may have an adverse affect.

Hennessy et al, (2002) measured the effect of human interactions and alterations in diet composition on the activity of the hypothalamic-pituitary-adrenal (HPA) axis, of dogs in a shelter. The HPA axis is activated by psychologically and physically stressful environments, such as the type of environment an animal is exposed to on arrival at an animal shelter. Moderation of the HPA axis signifies that the stress levels are reduced, suggesting an improvement in the welfare. Dogs were exposed to a programme of human interaction involving stroking, massaging and behavioural training each day. In addition, half of the dogs were placed on a premium diet and half on a typical maintenance diet. Both of these interactions had a moderating effect on the HPA axis. Additionally, when exposed to a novel stimulus, dogs which had been exposed to human interaction on prior occasions, had a reduced level of HPA activity, when compared to the dogs in the control group. Beerda et al (2000) conducted similar experiments and had similar findings. They recorded that dogs with lower levels of stress prior to a novel stimulus showed less of an increase in cortisol levels after the event. The results of this study also strongly suggest that diet can play an important role in adaptation to a shelter environment, with those dogs on a "premium diet" recorded as having lower plasma ACTH levels. The authors of this study admitted that these results were not conclusive and that this remains an area where further research can be conducted.

Conclusion

All of these articles suggest ways in which research into these fields can by continued and suggested ways in which an environment can be enriched, beyond the methods tested in these studies. Dogs are social animals and need regular contact with both humans and conspecifics. Enrichment can be given by simply increasing social interaction. All of these factors combined can give an animal the stimulation it requires. All of the studies discussed have been based on several prior studies in related areas and open the way for further research. They show that human interaction and small environmental changes such as shifting of a bed, playing appropriate music, improving the quality of food and placing toys in a kennel environment can improve the welfare of a sheltered animal both directly and indirectly. That is, directly by reducing stress levels in the immediate environment as shown by both Wells et al, (2002b) and Hennessy et al, (2002), and indirectly by increasing the chances of a dog being adopted (Wells et al, 2002a).

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