Reducing Stress in Shelter Dogs by modifying Shelter Management

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Introduction

Behavioural problems remain a primary reason for dogs being relinquished to shelters (Dorey *et al.,* 2012). Stressful shelter environments are likely to exacerbate undesirable behaviours, such as anxiety, vocalisation and destructive tendencies, thereby reducing the likelihood and success of adoptions. Longer stays result, causing stress to become chronic and detrimental to both health and behaviour, which is a significant welfare concern (Shiverdecker *et al.*, 2013; Hennessy *et al.*, 2002). While attempting to improve the shelter experience for dogs is important, techniques should be sympathetic to the limited resources available (Shiverdecker *et al.*, 2013). Following three studies of interactions and housing conditions that are affordable and timely, shelters may modify their management techniques towards those most beneficial for resident dogs.

Discussion

Stress in kennelled dogs is due to extended isolation from interaction with humans and other dogs, unnatural space restrictions and incessant noise and activity. Stressed dogs exhibit behaviours such as panting, vocalisation and shaking, as well as stereotypic behaviours (such as pacing) and physiological changes previously shown to indicate stress (Kogan *et al.*, 2012; Hennessy *et al.*, 2002).

Kogan *et al*. (2012) explored the impact of playing classical music on the stress levels of dogs, with measurements based on the behaviours they exhibit. A shelter that housed rescue and short-term boarding dogs (n=117) was used, with both groups placed randomly in kennels, individually or in pairs. Auditory stimuli used consisted of four classical music tracks, three heavy-metal tracks, a modified classical track designed for dog relaxation, and a control period of no music. On three weekdays during a set period, each of the nine conditions was implemented for 45 minutes each with 15 minutes of silence after each one. An observer recorded behaviours the dogs exhibited during each session, including body shaking, activity and vocalisation. Results showed that both groups of dogs spent more time sleeping during exposure to classical music than with other categories, including the specially designed calming music. Similarly, the time spent without vocalisation was highest during one particular classical track, and body shaking was most prominent during exposure to heavy-metal music. This study has considerable potential for improving current shelter environments. However, as the authors noted, this kennel had little background noise, whereas many kennels are high-noise environments. Efforts may therefore be needed to reduce noise, or to have a period during which kennels are kept quiet for music sessions.

In the second study, Shiverdecker *et al.* (2013) used both behaviour and plasma cortisol levels to measure the effect human interaction had on stress levels of newly admitted dogs (n=79). Dogs admitted within the previous 40 hours were used, and initially were housed in a room of high activity and noise. Five conditions were tested and these varied in human-interaction type: passive stranger, pet, play, isolation and home-cage. Each condition lasted for 30 minutes in an enclosure in a quiet room. In isolation, each dog was left alone in the enclosure, and those in the home-cage category were left in their original cage. Blood samples were taken before and after, while unseen observers recorded behaviours such as vocalisation, panting, tongue protrusions, yawns and time spent lying down.

Shiverdecker *et al.* (2013) found that before the test cortisol concentrations varied, but all decreased following human interaction, while no significant change was seen in dogs exposed to home cage and isolation. Behavioural observations revealed that even the presence of a passive stranger reduced stress behaviours of vocalisation and panting, when compared to those animals being held in isolation. This study found no significant differences in the type of human interaction on the effect of cortisol concentrations, while earlier studies found a certain petting style was needed. The authors suspect this was due to use of a quiet room for testing. A previous study by Hilby *et al.* (2006) found

that the most stressful period was immediately after the dog's admission, thus reinforcing the need for 30 minutes of human contact with dogs newly admitted into a shelter.

The final study looked at the preference of kennelled dogs for familiar or unfamiliar people. This can be valuable in ensuring that current interactions with dogs are beneficial. Pullen *et al.* (2012) used two samples of kennelled dogs: those in a re-homing kennel (RH) (n=25) and others in a long-stay kennel (LS) (n=23), who were housed there from a young age. LS dogs were housed in pairs, provided with an exercise paddock with other dogs and toys during the day as well as exercise, training or play sessions with a carer each day. An unfamiliar or familiar person sat in the dog's kennel for 15 minutes for LS dogs and 10 minutes for RH (due to volunteer time constraints). If the dog was in reach, the person touched and spoke to the dog, but ignored it when it moved away. The study found that RH spent more time near the familiar person and facing them in the first two minutes of the session compared to when an unfamiliar person was used. Meanwhile, the LS spent more time near and facing unfamiliar people than familiar during the entire session. After 8-10 minutes, RH tended to face away but remained near the person whether familiar or unfamiliar. Pullen *et al.* (2006) suggests that this supports the notion that dogs initiate and value human contact. Shelters can use these findings and ask familiar people to interact with recently admitted shelter dogs to provide a form of comfort, consistency and trust, while unfamiliar people could interact with those dogs that have been sheltered for longer periods and that need more novel experiences in their daily routine to reduce boredom.

Conclusion

These three studies offer new techniques for managing rescue shelters. The calming influence of classical music is both affordable and beneficial. The other studies offer improvements to the current interactions by volunteers and staff, first by ensuring interaction within 40 hours of the dogs' admittance in a quiet room, and subsequent interactions conducted by familiar individuals to provide comfort and stability, particularly for those dogs most affected.

References

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