The recognition of canine pain behaviours, and potentially hazardous Catch-Neuter-Return practices by animal care professionals

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Abstract

The assessment of animal welfare is reliant upon the application of animal- and resource-based indicators. Animal-based indicators (physical, physiological and behavioural) are considered to be more representative of an animal’s welfare state but are more difficult for an assessor to interpret. In order to build a robust composite framework for the assessment of welfare of dogs (Canis familiaris) within Catch-Neuter-Return (CNR) programmes, including both resource- and animal-based indicators, it is necessary to first evaluate whether appropriate capture and handling techniques plus behavioural, animal-based indicators can be reliably assessed by staff working in CNR programmes. Results of a video-based survey of experienced dog management staff and CNR practitioners are reported and indicate that staff experienced in canine CNR are reliably able to agree on acceptable and unacceptable handling and capture techniques. However, there is only fair agreement between observers in positively recognising pain. Thus, dog welfare in CNR may be at risk unless staff are effectively trained at recognising behavioural indicators of poor welfare including pain behaviours. This paper suggests that non-invasive, visual indicators of pain, such as facial tension and body posture, may be a reliable and effective approach to recognising post-operative pain in street dogs.

Keywords: animal welfare, Canis familiaris, Catch-Neuter-Return, dog, Trap-Neuter-Return, welfare assessment

Introduction

Catch-Neuter-Return (CNR) — the process of removing free-roaming dogs (Canis familiaris) from the community, surgically neutering these dogs, and returning them to the location from which they came (also known as Trap-Neuter-Return or TNR) — may confer a number of potential welfare hazards to dogs (Bacon et al 2017). Resources have been developed to evaluate some of the long-term welfare impacts of dog population management interventions (Barnard et al 2014; International Companion Animal Management Coalition [ICAM] 2015; Hiby et al 2017), but these are limited to programmatic or health measures (Hiby et al 2017). Health measures alone do not reflect welfare as it is a multi-dimensional concept (Kirkwood 2003; Botreau et al 2007; Hewson et al 2007). CNR has been described as instrumental in the management of populations of free-roaming dogs (Kahn et al 2007; Dalla Villa et al 2010) and, thus, welfare assessment methodologies are necessary in order to safeguard dog welfare within these programmes. The parameters selected to evaluate animal welfare may be categorised as animal-based, e.g. behaviour, health, or resource-based or environmental, e.g. housing (Winckler et al 2003). Parameters included in animal welfare assessments should be valid, reliable and feasible (Winckler et al 2003) and indicators should be aggregated to provide an assessment (Botreau et al 2007). Animal-based indicators, including behaviours, are widely regarded as being robust indicators of welfare (Dawkins 2003). However, behaviours can only be used as indicators if they are able to be reliably evaluated (Walker et al 2010). Facial expressions of pain have been identified using the Facial Action Coding System (FACS) developed by Ekman (Ekman & Rosenberg 1997). The system breaks down facial expressions into facial action units (FAUs), characterised by movements of an individual muscle or a group of muscles in reaction to different emotions including pain. Based on this approach, reliable facial grimace scales for evaluation of pain behaviours have been developed and validated in a number of species, including humans (Craig 1992; Grunau et al 1998), rabbits (Oryctolagus cuniculus) (Keating et al 2012), rodents (Leach et al 2012), cats (Felis catus) (Holden et al 2014), and horses (Equus caballus) (Dalla Costa et al 2014), although interpretation of such indicators requires care as absence of grimace does not necessarily mean absence of pain. All these facial grimace scales identified orbital tightening of the muscles around the eyes, and changes in ear position as an identifier of pain, suggesting some FAUs may apply across species.