Using a Delphi method to estimate the relevance of indicators for the assessment of shelter dog welfare

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Abstract

The European regulatory framework lacks standardisation as regards the minimum requirements for shelter facilities, making defining welfare standards for dogs challenging. Dog (Canis familiaris) welfare assessments should consist of a comprehensive set of measurements that allow the calculation of an overall ‘welfare score.’ The Shelter Quality protocol was developed for the purpose of assessing shelter dog welfare. The study aims to establish a standardised system for evaluating shelter dog welfare by obtaining agreement from experts on the weighting of different measures contributing to an overall welfare score. The Delphi technique is a widely used method for establishing consensus among experts. Two Delphi procedures were implemented and we compared their effectiveness in achieving expert consensus by evaluating rounds’ numbers required to reach consensus and the response and attrition rates. Expert consensus was achieved in Delphi 1 when the standard deviation in the expert weightings was ≤ 5. This was achieved easily for the welfare score weightings of the four principles: ‘Good feeding,’ ‘Good housing,’ ‘Good Health,’ and ‘Appropriate behaviour.’ Animal-based measures were found to reach consensus more quickly than resource-based measures. In Delphi 2, we used the coefficient of variation to determine consensus. No statistical differences were found between the two Delphi methods for attrition rate, response rate or number of participants. Continuing rounds until a consensus is reached is recommended as this method balances time and participant fatigue. A standardised scoring system is provided, using a single overall score of welfare that can be used to compare welfare standards between shelters.

Keywords: animal welfare, companion animal, Delphi methodology, expert consensus, shelter dogs, Shelter Quality protocol

Introduction

According to Italian law (14/08/1991, n 281), free-roaming dogs (ie, unrestricted, unsupervised dogs) must be captured and placed in the local public sanitary shelter and remain so for a minimum, ten-day quarantine period to reduce risk of disease transmission. After this time, if they are not returned to their owner or adopted, dogs are transferred to long-term shelters where they will remain until their adoption or death. In Italy, long-term shelters are managed by the municipality government, private groups or non-government organisations. Italian national legal framework does not specify minimum standards for the management and keeping of dogs. Instead, these standards are under regional control, leading to high variability in management approaches across the country (Barnard et al 2016; Arena et al 2019a). Shelter dogs (Canis familiaris) are at risk of poor social, environmental and management conditions that may lead to negative health and welfare states. These conditions include social deprivation, physical restriction, overcrowding, non-stimulating environments, and separation from an attachment figure (aversive stimuli). Such conditions may contribute to the onset of behavioural problems including anxiety and fear-related disorders, stress-related aggression, and repetitive behaviours. Shelter dogs may therefore be considered at high risk of stress, which can compromise dog health and welfare (Bearda et al 2000; Hennessy et al 2001; Wells et al 2002; Hiby et al 2006; Taylor & Mills 2007; Dalla Villa et al 2013; Protopopova 2016). Stress can be defined as an individual’s physiological and behavioural response to perceived uncontrollability and/or unpredictability in the environment. In stressful circumstances, an individual is unable to respond sufficiently to meet the environmental demand (Notari 2009; Koolhaas et al 2011). The extent to which a stressor impacts an individual is determined by their coping ability and their capacity to recover quickly both physically and socially (ie their resilience) (Colditz & Hine 2016). Coping abilities are defined as behavioural and physiological efforts to respond to the stressor (Mobeg 2000; Broom 2001; Notari 2009).