

DETERMINING ANIMALS' QUALITY OF LIFE: VETERINARY CRITERIA AND ASSESSMENT

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Summary

There are ethical inconsistencies in the treatment of animals which are accepted on the basis of various cultural, religious, and economic ideologies and values, rather than on a scientific, biological, and ethological understanding of animal sentience and the conditions and care required to provide them with a life worth living. Such consideration is a moral imperative regardless of custom and pecuniary interests. This calls for a full accounting in terms of costs to the animals and the environment and risks and benefits to humans/society and our duty to provide the best of care within the context of their utility. Quality of life (QOL) assessments can provide a sound basis for implementing animal welfare standards and reforms especially in the treatment of farmed and laboratory animals and those used in entertainment and for draft work in particular. When welfare improvements are not implemented, QOL determinations can provide a legal and ethical impetus for the adoption of non-animal alternatives and for the establishment of more effective animal welfare and protection laws and appropriate amendments to existing codes and statutes.

Introduction And Overview

Culturally accepted and economically rationalized ways of keeping animals, such as sows in gestation crates, laying hens and song birds in cages, apartment dogs in crates

all day, and house cats roaming free, call for examination from the perspectives of animals' quality of life (QOL) and related best interests, and social, public health, and environmental consequences.

The intention here is not to provide an exhaustive review of the literature on this topic about which there has been considerable coverage (see *JAVMA Archives on Quality of Life*), but to offer an integrated approach and objective criteria to help determine the QOL in animals across all situations and contexts, including domesticated, captive, and wild species and whether or not they are healthy, ill, or injured. This is not to discredit more subjective and experienced-based assessments that may significantly facilitate objective evaluation and interpretation.

There have been considerable research and discussion over the past several years since the U.K's Farm Animal Welfare Council presented basic criteria deemed essential for the welfare of animals that addressed both the physical and mental states of animals (1). Known as the Five Freedoms they are considered by the World Organization for Animal Health (previously known as the Office International des Epizooties or OIE) when developing international standards on animal welfare (2). The Five Freedoms are: freedom

from hunger and thirst; freedom from thermal and physical discomfort; freedom from pain, injury, or disease; freedom to express normal behavior; and freedom from fear and distress. Paramount are determining and correcting compromised physiological and/or behavioral homeostasis and related cognitive and affective functions to achieve physical and psychological well being.

Significant progress has been made since these basic freedoms were established, notably in developing the tools to assess animal pain and in evaluating, refining, and advancing standards of care and determining stress and distress in farmed, laboratory, and companion animals and wild animals in captivity (3). A two-domain (comfort-discomfort and pleasure) model has been proposed to describe QOL in animals (4). More recently a “Five Domains Model” to facilitate the grading of *both* negative experience (welfare compromise) and positive experience (welfare enhancement) has been developed as a more effective quality of life assessment than the basic “Five Freedoms” (5).

For animals under certain circumstances, specific QOL criteria tailored to address their particular clinical condition (e.g., osteoarthritis and chronic pain in dogs, and response to cancer chemotherapy and cardiac disease in cats assessed by the animals’ owners) can be of significant clinical value in determining the prognosis and effectiveness of treatment (6, 7, 8, 9, 10, 11).

QOL assessments are essential in making informed decisions, including selecting appropriate veterinary and behavior-modifying interventions, hospice/palliative care and elective euthanasia when there are evident intractable suffering and prognosis of non-recovery; seizure and protective custody in cases of cruelty and neglect; and quarantine and special (clinical) needs (12).

Where the clinical condition calls for euthanasia, decision-making can be facilitated with a 0–10 scoring of the basic criteria reflecting the animal patient’s physical and emotional state, identified as hurt (pain management), hunger, hydration, hygiene, happiness, mobility, and more good days than bad (13). QOL determinations can also help avoid possible overtreatment at the owner’s and patient’s expense. Ideally there should be a team approach that includes at a minimum the attending veterinarian with the animal’s caregiver/owner.

QOL determinations toward the end of life in healthy animals being handled, transported, and slaughtered can improve their welfare and be cost-saving (14, 15).

The qualitative aspects of animals’ well being can be quantified using numerical scores for such indices as intensity, frequency, and duration against a baseline norm for that individual or of one of similar age, sex, and species under comparable conditions. Professional opinion will then be based more on objective determination than subjective impression. Non-invasive measures (e.g., determining cortisol stress levels from fecal rather than blood samples) and using audio-visual monitors to control for the observer effect and presence of owner/handler may be applicable in many instances.

The following list summarizes the basic criteria for QOL assessment and improvement where indicated and feasible.

Physical considerations:

- Provision of physical safety, hygiene, and shelter appropriate to ambient environment and species, and condition-appropriate optimal ambient temperature, humidity, illumination, ventilation, nutrition, and hydration.
- Provision of adequate living space and surfaces to enable normal physical activities.
- Identification and control of disturbing visual, auditory, and olfactory stimuli and use of calming sounds, pheromones etc. where appropriate.

Psychosocial considerations:

- Freedom from fear and anxiety. Assessment of animal’s affective (emotional) state, including general demeanor and responsiveness. Provision of emotional security as needed.
- Identification and alleviation of clinical depression, separation anxiety, and abnormal “coping” behaviors (e.g., compulsive/anxiety disorders) indicative of stress and distress.
- Assessment of acute/chronic intensity of stress/pain intensity and duration, and determination of prognosis with regard to recovery/relief and appropriateness of humane decision to euthanize rather than prolong suffering. Can the intensity and duration of unavoidable suffering be minimized?
- Evaluation of socio-environmental conditions to meet species’ and individual’s special needs and expression of natural behaviors with environmental enrichment

provided for physical and cognitive activities that many animals seek and enjoy.

- Enabling animals' control over immediate environment (e.g., seeking shelter, avoiding or engaging in social contact) and choice in daily routine, especially for some captive wild species, to help prevent emotional/physical stress and subsequent progression to psychosocial imbalance and clinical disorders (e.g., anxiety and compulsive disorders).

Developmental considerations

- For immature/sub-adult animals, provision of optimal nurture and social and environmental conditions necessary to promote healthy behavioral, emotional, and cognitive development.
- Determination of hereditary abnormalities (e.g., extreme brachycephaly and paedomorphism) and congenital disorders affecting quality of life that can be rectified.
- Determination of transgenerational epigenetic factors that can benefit the health and future quality of life of offspring (e.g., improved condition and handling/socialization of animals before breeding and during gestation).

Additional considerations:

- Determination of the training and ability of caregivers at each level of care, along with their attitude, understanding, expectations, and actions, and animals' reactions to them.
- With animals difficult and dangerous to handle, prioritization of safety, behavior modification, and protected contact rather than reliance on physical and chemical restraint and surgical alteration (declawing, de-fanging) which can be detrimental to QOL.
- Assessing what effects the animal's QOL has on environmental quality and the QOL of others, and vice versa.
- For draft/work animals, determining optimal workload and duration, and improving harnessing and cart/plough design to reduce stress and injury.

Discussion

Advances in ethology and biochemistry enabling more objective determination of animals' stress and distress call for further refinement and elaboration of these basic criteria (16, 17, 18). This is especially pertinent considering the recently documented lack of consistency in veterinarians' evaluation of case records concerning animal welfare and possible cruelty and neglect (19, 20). Inconsistency may also result when animals, depending on their use, are kept under different husbandry/care conditions, some of which may be acceptable to some evaluators but not to others.


Socially accepted norms of animal care and animal use, along with associated public regard and concern for other animals, have evolved in many cultures, East and West, toward regarding companion animals less as possessions or chattel and more as individuals in their own right and as family members. With growing public concern for endangered species, for the health and welfare of animals in their communities and of those whose meat and other products they consume, the issue of animals' QOL and professional determination of same is in demand by protectors and legislators alike. Documentation and quantification of clinical and behavioral signs and physiological and biochemical indices of stress and distress in animals by veterinarians, ethologists, and animal welfare scientists is crucial in assessing and improving the quality of life of animals (21). But in the final analysis, "Although animal welfare science may enlighten us about different problems and opportunities for the animals, it is not able to give a final verdict on what is best for the animal. To come to a view on this involves an ethical judgment" (22). This is the promising role of veterinary bioethics, in which sound science, ethics, and an open mind are essential elements in improving animals' QOL under our care (23).

QOL concerns can be confounded by personal, religious, and politically contentious right to life beliefs. The terminally ill and suffering are put on life-support, unadoptable dogs incarcerated for life in "No Kill" shelters, many with chronic health issues, while cats are neutered and released into unprotected environments by those who see euthanasia as violating the right to life. To not consider each individual animal's QOL and claim they have a right to life regardless of the consequences is tantamount to abdicating ultimate responsibility as their guardians/care givers. The consequences of invoking the right to life for others coupled with the doctrine of *ahimsa* (not harming or killing), which prohibits compassionate mercy killing and death with dignity, results in much otherwise avoidable suffering in some countries and segments of society (24). The *ahimsa* doctrine mirrors the human-centered pro-life ideology in the less secular West, of which the "no kill" animal rescue movement is an extension.

Now, with the gradual societal and academic acceptance of animals' emotional needs and mental well being, advances in research in animal welfare science and cognition continue. The gap between our understanding of animals and their needs, emotional states, and consciousness is closing so that better ways to care for them may be implemented (25). As

history informs, the wider this gap, the more inhumanity becomes embedded as a cultural norm.

Animals serve society in a multitude of ways. As human companions, many of them bring the “good medicine” of trust, friendship/affection, and joy into our daily lives, and more. In the U.K. the duty of caring for animals has been codified into law for pet owners to comply with meeting the “five welfare needs” of their animals covering optimal housing, diet, behavior, social interactions and health (26).

Society also recognizes the economic, ecological, and other values of domesticated and wild animals, which it affirms with appropriate animal welfare legislation, protection, and conservation laws and conventions. The central role of the veterinary profession in assessing animals’ QOL will continue to be challenged by the status quo and cultural norms of animal care and use and is worthy of this task for the welfare and well-being of all under the banners of One Welfare and One Health (27, 28). 

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Postscript: “EXOTIC” (Non-Domesticated) PETS

A useful guide is available enabling one to assess on a scale of easy, moderate, difficult and extremely difficult which exotic species to consider or avoid keeping. See [PDF] EMODE-brochure - Zoocheck for more background information, explanation and worked examples please refer to the full article: Warwick, C, Steedman, C, Jessop, M, et al. Assigning Degrees of Ease or Difficulty for Pet Animal Maintenance: The EMODE System Concept, *J Agric Environ Ethics*. 2014;27(1):87–101.

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