

Review Article

Determining Animals Quality of Life: Veterinary Criteria and Assessment

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Received: 14 January 2019; **Accepted:** 11 March 2019; **Published:** 13 March 2019

Abstract

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.

Keywords: Veterinary; Animal welfare; Environmental; Animal Health

1. 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 allowed to roam 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/contexts, including domesticated, captive, wild species and whether or not they are healthy, ill or injured. This is not to discredit more subjective and experienced-based assessments which may significantly facilitate objective evaluation and interpretation.

There has 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 [1]. The Five Freedoms are: 1) Freedom from hunger and thirst; 2) freedom from thermal and physical discomfort; 3) freedom from pain, injury, or disease; 4) freedom to express normal behavior; and 5) freedom from fear and distress. Paramount is 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 [2]. A two domain (comfort-discomfort and pleasure) model has been proposed to describe QOL in animals [3]. More recently a "Five Domains Model" to facilitate the grading of both negative experiences (welfare compromise) and positive experience (welfare enhancement) has been developed as a more effective quality of life assessment than the basic "Five Freedoms." [4]. For animals under certain circumstances, specific QOL criteria tailored to address their particular clinical condition (e.g. Osteoarthritis and chronic pain in dogs, 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 [5-10].

QOL assessments are essential in making informed decisions, including: selecting appropriate veterinary and behavior-modifying interventions, hospice/ palliative care [11] and elective euthanasia where there is evident intractable suffering and prognosis of non-recovery; seizure and protective custody in cases of cruelty and neglect; quarantine and special (clinical) needs. Where the clinical condition calls for euthanasia, decision-making can be facilitated with a 0-10 scoring of the basic criteria reflecting the animal patients' physical and emotional state, identified as hurt (pain management) hunger, hydration, hygiene, happiness, mobility and more good days than bad [12]. QOL determinations can also help avoid possible overtreatment at the owner's and patient's expense. Ideally, there should be a team approach and at a minimum the attending veterinarian with the animal's care giver/owner. QOL determinations toward the end of life in healthy animals being handled, transported and slaughtered can improve their welfare and be cost-saving [13, 14].

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 an objective determination than subjective impression. Non-invasive measures (e.g. Determining cortisol stress levels of 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.

2. Physical Considerations

- Provision of physical safety, hygiene, shelter appropriate to ambient environment and species and condition-appropriate, optimal ambient temperature, humidity, illumination, ventilation, nutrition and hydration.
- Adequate living space and surfaces to enable normal physical activities.
- Identify and control disturbing visual, auditory and olfactory stimuli and use calming sounds, pheromones etc. where appropriate.
- Assess physical condition, general health and evidence of disease, parasitism and injuries.

3. Psychosocial Considerations

- Freedom from fear and anxiety. Assess animal's affective (emotional) state, including general demeanor and responsiveness. Provide emotional security as needed.
- Identify and alleviate clinical depression, separation anxiety and abnormal "coping" behaviors (e.g. compulsive/anxiety disorders) indicative of stress and distress.
- Assess acute/chronic intensity of stress/pain intensity and duration, and prognosis with regard to recovery/relief and appropriateness of the humane decision to euthanize rather than prolong suffering. Can the intensity and duration of unavoidable suffering be minimized?
- Evaluate if socio-environmental conditions meet species' and individuals' special needs and expression of natural behaviors with environmental enrichment for physical and cognitive activities which many animals seek and enjoy.
- Enable animals' control over the immediate environment (e.g. seek shelter, avoid or engage 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).

4. 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.
- What hereditary abnormalities (e.g. extreme brachycephaly and paedomorphism) and congenital disorders that affect quality of life can be rectified?
- What transgenerational epigenetic factors can benefit the health and future quality of life of the offspring, (e.g. improved condition, nutrition and handling/socialization of animals before breeding and during gestation)?

5. Additional Considerations

- Determine 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, prioritize safety, behavior modification and protected contact rather than relying on physical and chemical restraint and surgical alteration (de-clawing, de-fanging) which can be detrimental to QOL.
- What effects does the animal's QOL have on environmental quality and the QOL of others, and vice versa?
- For draft/work animals, determine optimal workload and duration and improve harnessing and cart/plug design to reduce stress and injury.

6. 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 [15-17]. This is especially pertinent considering the recently documented lack of consistency in the veterinarians' evaluation of case records concerning animal welfare and possible cruelty and neglect [18, 19] 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 but 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 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 [20] 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. 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 judgement" [21]. This is the promising role of veterinary bioethics where sound science, ethics and an open mind are essential elements in improving animals' QOL under our care [22].

Improving the collective QOL of large numbers of animals raised under confined, intensive production systems may be enhanced by the adoption of the "Three Rs" originally applied to animals used in biomedical research and product testing-refinement, (more humane care and procedures), replacement (using non-animal alternatives) and reduction [23]. The ecological, environmental, economic and public health benefits, in addition to the benefits for fewer food animals being raised for their products, may yet be realized by conscientious consumers supporting more

humane and sustainable farming practices, a nascent movement still limited by affordability, availability and opposition by the livestock and associated vested interests [24].

QOL concerns can be confounded by personal, religious and politically contentious right to life beliefs. So the terminally ill and suffering are put on life-support, un-adoptable 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 [25]. 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 [26]. 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 bringing 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 [27]. 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 [28, 29] under the banners of One Welfare and One Health.

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Citation: Michael W Fox. Determining Animals Quality Of Life: Veterinary Criteria and Assessment. *Archives of Veterinary Science and Medicine* 2 (2019): 001-007.



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