Prioritisation of companion dog welfare issues using expert consensus

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Abstract

Resources for tackling animal welfare issues are often limited. Obtaining a consensus of expert opinion on the most pressing issues to address is a valuable approach to try to ensure that resources are wisely spent. In this study, seven independent experts in a range of disciplines (including veterinary medicine, animal behaviour and welfare science and ethics) were consulted on the relative prioritisation of welfare issues impacting companion dogs in Great Britain. Experts first anonymously ranked the priority of 37 welfare issues, pre-defined from a literature review and an earlier published survey. In a subsequent two-day panel workshop, experts refined these issues into 25 composite groups and used specific criteria to agree their relative priorities as a Welfare Problem (WP; incorporating numbers of dogs affected, severity, duration and counter-balancing benefits) and a Strategic Priority (SP; a combination of WP and tractability). Other criteria — anthropogenicity, ethical significance and confidence in the issue-relevant evidence — were also discussed by the panel. Issues that scored highly for both WP and SP were: inappropriate husbandry, lack of owner knowledge, undesirable behaviours, inherited disease, inappropriate socialisation and habituation and conformation-related disorders. Other welfare issues, such as obese and overweight dogs, were judged as being important for welfare (WP) but not strategic priorities (SP), due to the expert-perceived difficulties in their management and resolution. This information can inform decisions on where future resources can most cost-effectively be targeted, to bring about the greatest improvement in companion dog welfare in Great Britain.

Keywords: *animal welfare, companion animal, dog, expert, priority, stakeholder*

Introduction

Animal welfare is a complex and multi-dimensional construct (Mason & Mendl 1993; Fraser *et al* 1997) and in recognition of the plethora of welfare issues an individual or a population may encounter, scientists have developed methods to try to assess which issues cause the greatest impairment to animal welfare (eg Scott *et al* 2003). Identification of priorities in animal welfare follows from the premise that, where the animals' capacities to suffer can be assumed, the most pressing issues are determined by the severity and duration of suffering and the number of animals affected (Kirkwood *et al* 1994; Farm Animal Welfare Council [FAWC] 2006). However, such assessments are limited by the availability of empirical evidence, especially where the population is not closely monitored.

A number of potential welfare issues for companion dogs have been highlighted within the scientific literature (eg separation anxiety: Schwartz 2003; inherited disease: Asher *et al* 2009; obesity: Gosselin *et al* 2007; tail docking: Bennett & Perini 2003) and in media campaigns (eg inherited disease: Rooney *et al* 2009; dog fighting: BBC News 2009), though the relative importance and impact of

each issue — and indeed, of others less well published — is currently unknown. Monitoring companion animal welfare is difficult since the population size and demography is unknown and must be estimated from several data sources (reviewed in Asher *et al* 2011), and the conditions in which companion animals are kept lack specificity and stability (McGreevy & Bennett 2010). In some cases, media coverage and publicity may amplify the perceived importance of certain welfare issues compared to others where less public discussion or scientific literature is available. Scientific study is often limited by available funding, and the priorities of funding bodies may not necessarily coincide with the current issues affecting populations, or having the greatest welfare impact on individuals.

One way to overcome these difficulties is to utilise the judgements of experts and/or stakeholders who are engaged in scientific research and hold stakeholder community knowledge and direct practical experience of animal welfare topics. This approach has been used in collating information on potential welfare concerns in farm (Whay *et al* 2003), laboratory (Leach *et al* 2008) and companion (Houpt *et al* 2007; Yeates & Main 2011; Buckland *et al*

2013) animals. Expert opinion is a valuable method of synthesising information on difficult and broad topics. Using this approach for companion animal welfare issues, Yeates and Main (2011) describe obesity, breed-related conditions and behavioural problems as important issues for pet dogs according to veterinarians. In addition, canine behaviour experts described the use of drugs or shock therapy for behaviour problems, neutering, caging (crating), debarking and euthanasia as major international canine welfare issues (Houpt *et al* 2007). The authors of these studies call attention to the need for further research on the impact of welfare issues and more quantitative risk analysis. Neither study, however, examines opinions across different fields of expertise; an important consideration since specialisation in a particular discipline may predispose individuals to prioritise issues with which they have greatest experience (Buckland *et al* 2013). There may be potential limitations to using methods which source 'general' and anonymous expert opinion to prioritise issues (such as online surveys); uneven representation of specific stakeholder groups may occur, and there is an assumption that respondents approach the prioritisation assessment in a uniform way. Furthermore, it is important to determine whether experts from diverse fields can agree on priority welfare issues, since those issues that affect dog welfare are likely to be multifactorial in origin, and addressing such issues will likely require collaboration between several stakeholder groups. In the present study, therefore, a *consensus* view was sought from experts in welfare and behaviour sciences, veterinary science, epidemiology and zoology disciplines, to try to gather more robust information on which to base decisions regarding prioritisation of welfare issues for British companion dogs. An expert panel provides an opportunity to reach consensus by discussion and assessment against agreed and commonly understood criteria. This is particularly beneficial for controversial or complex topics, where an individual's opinion(s) may be moderated by knowledge from experts in other disciplines, thereby overcoming a long-standing criticism of the alternative multistage survey Delphi technique (see Goodman 1987). This study was conducted as the final part of a series of related work, funded by a major British animal welfare charity.

Materials and methods

Identification of welfare issues

Companion dog welfare issues were identified from two complementary sources; a review of scientific and non-scientific literature (unpublished) and an anonymous and online survey of stakeholder opinion (Buckland *et al* 2013). A list of 37 pre-defined welfare issues (see Appendix I; available at the supplementary material to papers published in *Animal Welfare* section at the UFAW website, www.ufaw.org.uk) was compiled from these sources, using the original definitions and scope of the issues provided by stakeholders in the survey to maintain objectivity.

Recruitment of experts

Seven expert panellists were invited to represent seven academic and professional disciplines considered integral to companion dog welfare: behaviour, welfare science, genetics, nutrition, veterinary ethics, veterinary science and veterinary nursing. In addition, an expert in welfare legislation and Government policy advised the panel (but did not take part in the prioritisation of issues). The experts were selected based on their academic and/or professional reputations, qualifications and publications in the specific disciplines, independent of professional affiliations. An independent chair was appointed to oversee the workshop.

One month before the panel workshop, each expert received an information package containing reports by the authors on the literature review (unpublished), the survey of companion animal stakeholders (Buckland *et al* 2013) and an estimation of the UK-owned dog population size (Asher *et al* 2011), together with instructions for a preliminary task to complete prior to the workshop.

The preliminary task — individual categorisation and prioritisation of pre-defined welfare issues

The preliminary task was anonymous and individual. In preparation for the workshop, each expert was asked to rank the relative priority of 37 pre-defined welfare issues as follows. Experts were asked to consider the impact of each issue on the individual dog, how many dogs might be affected, and whether they considered that the issue required urgent action. Based on this assessment, they were then asked to allocate each issue to one of four categories: A) of utmost importance; B) of high importance; C) of limited importance; and D) of little importance. The categories were grouped into high (A and B) and low (C and D) importance. No limit was placed on the number of issues that could be assigned to each category. The experts were asked to note any other criteria they used in completing the preliminary task.

Experts' individual rankings were returned to the authors and evaluated for level of agreement prior to the workshop. This allowed provisional assignment of issues to the four categories above, based on the collective rankings, as a starting point for the workshop discussion. Given the absence of accepted guidelines for defining the required level of group agreement on which to base this preliminary prioritisation (eg 51%: Loughlin & Moore 1979; McKenna 1994; 80%: Green *et al* 1999) and accounting for the probable difficulty in reaching a consensus on the relative priority of an extensive list of issues, a simple algorithm was used to determine categorisation. An issue was assigned to a category (A, B, C or D) if there was ≥ 61% agreement between experts, a category group (high or low) when there was 51–60% agreement, or not assigned to any category or group if there was ≤ 50% agreement. Based on these criteria, provisional assignment of 13 issues into categories, and a further 16 issues to one of the two category groups were made (13 in high, A or B; three in low, C or D). Eight issues were not assigned to any category or group. These allocations served to predict the length of discussion (ie unassigned at this stage predicted more lengthy discussion time) for each welfare issue in preparation for the workshop.

Table 1   Criteria and their descriptors devised by the experts in the panel workshop for the assessment of priority of welfare issues.

Criterion	Score				
	1	2	3	4	5
Proportion of dogs affected (P): An approximation of the percentage of dogs in Great Britain that may suffer adverse welfare effects as a result of the specific welfare issue†	Very few	Some	Many	Majority	Almost all
Duration (D): The average length of time a dog may suffer adverse welfare effects	Very brief	Short	Intermediate	Long	Constant/almost constant
Severity (S): The degree of harm inflicted by the adverse effects associated with the welfare issue	Minimal	Mild	Moderate	Severe	Extreme
Counterbalancing effects (CB): The potential benefits to the individual dog associated with the welfare issue‡	Very many	Many	Some	Few	None
Tractability (T): The perceived manageability of the welfare issue for resolution or improvement	Extremely difficult	Difficult	Intermediate	Relatively easy	Easy
	Descriptive category				
Confidence (C): The confidence of the panel in their scores, based upon experts' experience and the certainty or availability of scientific literature	None	Low	Moderate	High	Certain
Ethical significance (E): The ethical significance of a welfare issue that is not directly related to the animal's welfare, eg societal attitudes or moral conflicts	Insignificant	Low	Moderate	High	Extreme
Anthropogenicity (A): The extent to which the welfare issue derives from human activities or influence	Low	Slightly	Moderately	Mostly	Fully

† Scores for this criterion took into consideration the likely severity of the issue — if the welfare consequences of an issue were expected to occur whether severity was mild, moderate or severe, then the number of dogs considered to be affected would be increased to reflect this. If the welfare consequences were only considered to occur in severe cases, the number of dogs affected is likely to be relatively less.

‡ Certain welfare issues may have some direct or indirect benefits to the individual dog, eg a lack of neutering provides opportunity to express natural sexual or maternal behaviours.

The workshop

The panel of experts attended a workshop held on 8th and 9th February 2010. Individuals were nominated to lead discussions on certain welfare issues, according to their expertise.

Experts were first given an opportunity to revise the list of pre-defined welfare issues. Eight criteria were defined (Table 1) and subsequently used to estimate the priority of each welfare issue. Simple descriptive scores — based on a five-point scoring system — were applied to each welfare issue, for each criterion. Several of the scores were then incorporated into multiplicative calculations to enable quantitative estimates of both [1] the significance of the Welfare Problem (WP) and its [2] Strategic Priority (SP), as follows:

[1] WP = Proportion of dogs affected × Duration of experience × Severity of experience × Counterbalancing benefits

[2] SP = WP × Tractability (ie possibility for resolution).

The WP score (theoretical maximum 625) indicated the relative importance of an issue to the welfare of an individual dog, and the dog population as a whole. The SP score (theoretical maximum 3,125) built on the WP score by incorporating tractability, thereby highlighting the potential difficulty in resolving the welfare issue; a high score indicates an issue of high importance, with better tractability, relative to issues with lower tractability scores. The remaining criteria

(anthropogenicity, ethical significance, and confidence; defined in Table 1) were not included in aggregate scores but these descriptive scores provided additional information for prioritisation of welfare issues.

Results

The workshop

The panel revised (see Appendix I for notes on the revisions made to the original welfare issues) the list of 37 pre-defined welfare issues to 25 (Appendix II; available at the supplementary material to papers published in *Animal Welfare* section at the UFAW website, www.ufaw.org.uk), by combining certain issues where there was significant overlap, eg routine spaying and routine castration were grouped, and noise phobia and separation-related behaviour were merged to create a broader issue of 'undesirable behaviours'. Other issues were removed because they were judged to be beyond the scope of the prioritisation exercise, eg inadequate legislation was considered by the panel to relate to management of welfare issues, rather than being a welfare issue *per se*.

Criterion scores for each welfare issue are given in Table 2, and ranked aggregate scores for WP and SP are provided in Figures 1 and 2, respectively. Three issues scored highest

Table 2 The welfare issues considered in the panel workshop and the score for each criterion (see Table 1). Descriptive categories for the criteria not included within these aggregate scores are also given (C, E and A). Welfare issues are given in order of rank for Welfare Problem (WP) scores.

Welfare issue	Proportion of dogs affected (P)	Duration (D)	Severity (S)	Counter-balancing benefits (CB)	Tractability (T)	Confidence (C)	Ethical significance (E)	Anthropocentricity (A)
Inappropriate husbandry	4	4	3	5	2	High	Insignificant	Fully
Lack of owner knowledge	4	4	3	5	2	High	Insignificant	Fully
Undesirable behaviours	4	4	3	5	2	High	Low	Mostly
Inappropriate socialisation	3	4	3	5	3	High	Insignificant	Fully
Inherited disease	3	4	3	5	3	High	Insignificant	Mostly
Conformation-related disorders	2	4	4	5	4	High	Insignificant	Fully
Obese/overweight dogs	3	4	3	4	2	High	Moderate	Mostly
Professional incompetence	2	3	3	5	2	Moderate	Moderate	Fully
Production of puppies	2	3	3	5	4	High	Insignificant	Fully
Cost of veterinary treatment	2	3	3	4	2	Moderate	Low	Fully
Media influence	2	3	3	4	2	Moderate	Moderate	Fully
Malnourishment	1	4	3	5	2	High	Low	Mostly
Intentional physical harm	1	3	4	5	1	Moderate	Moderate	Fully
Welfare cost of treatment	3	3	3	2	2	High	Low	Fully
Irresponsible ownership	1	4	3	4	1	Low	Low	Fully
Kennelling	2	2	4	3	3	Moderate	Low	Fully
Elective/cosmetic surgery	2	3	2	4	2	High	High	Fully
Lack of identification	2	2	3	4	4	High	Low	Mostly
Quantity over quality of life	2	2	4	3	2	High	High	Fully
Fighting, weapon and accessory dogs	1	4	3	4	2	High	High	Fully
Displaced dogs (stray)	1	3	3	4	2	Moderate	Moderate	Fully
Long distance travel	2	2	3	3	4	High	Low	Fully
Lack of elective neutering	3	2	2	2	4	High	High	Fully
Routine neutering	3	2	2	2	4	High	Extreme	Fully
Euthanasia of healthy dogs	2	2	1	3	3	High	Extreme	Fully

for WP: inappropriate husbandry; lack of owner knowledge and undesirable behaviour, though the relative order changed for SP, where the three highest scoring issues were: conformation-related disorders, inappropriate socialisation and inherited disease. No welfare issue was considered, by the panel, to affect almost all companion dogs in Great Britain; but the majority of issues were deemed to have a long duration (relative to lifespan) for an individual dog. The majority of welfare issues were considered to be between mild and moderately severe; with only conformation-related disorders, intentional physical harm, kennelling, and quantity over quality of life rated, by the panel, as severe. The majority of welfare issues were suggested to have few or no counter-balancing benefits. However, the following were suggested to have 'many' benefits: the welfare cost of treatment; lack of elective neutering; and routine neutering. Most welfare issues were considered difficult in terms of tractability; intentional physical harm and irresponsible ownership were considered the most difficult to resolve. In general, experts were confident in their assessments of criterion scores: low confidence was applicable only to irresponsible ownership. High to extreme (non-welfare related) ethical significance was scored for five issues: quantity over quality of life; fighting

Figure 1
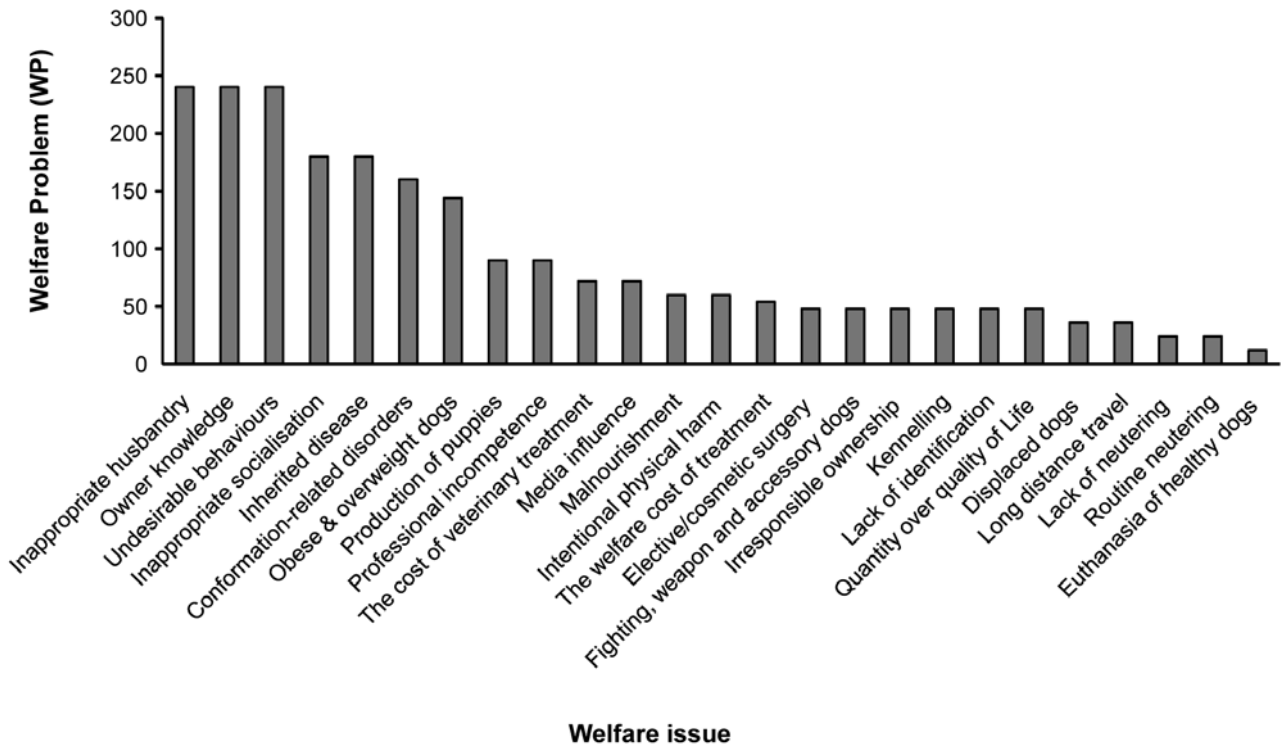
Ranked Welfare Problem (WP) scores for welfare issues, where score is derived from values P × D × S × CB. Scores are based on collective expert judgement at the panel workshop.

Figure 2
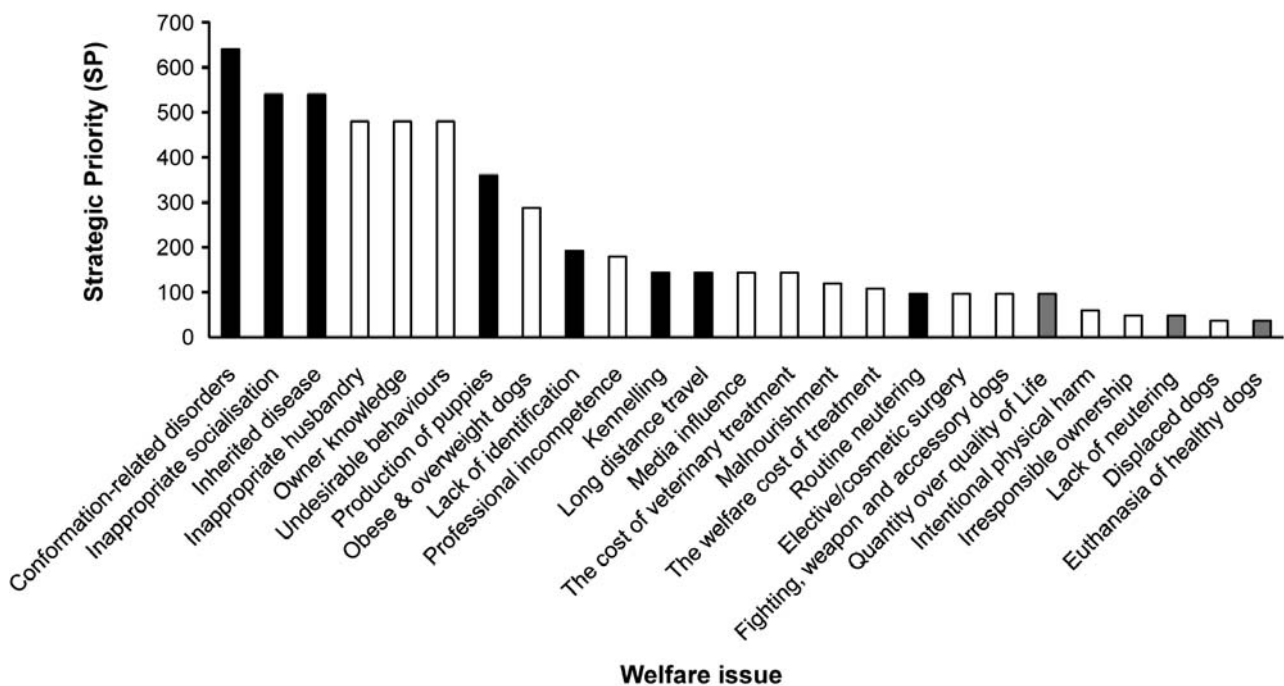
Ranked Strategic Priority (SP) scores for welfare issues, where score is derived from values (P × D × S × CB) × T. Scores are based on collective expert judgement at the panel workshop. Black bars indicate an increase in prioritisation for SP rank (compared with WP ranking); white bars indicate a decrease prioritisation of the issue for SP rank; grey bars indicate no change in prioritisation of the issue between SP and WP score ranks.

weapon and accessory dogs; lack of elective neutering; routine neutering; and euthanasia of healthy dogs. All issues were considered by the panel to mostly or fully arise from human activities or influence (anthropocentricity).

Discussion

The aim of this expert panel study was to systematically prioritise a diverse range of issues affecting the welfare of companion dogs in Great Britain, in order to provide a resource that could aid animal welfare organisations in determining how to use their funding most effectively. While expert opinion on companion dog welfare within individual disciplines has been sought previously (Houpt *et al* 2007; Yeates & Main 2011), to our knowledge, the present study is the only panel discussion of diverse canine welfare issues where varied professional and academic disciplines have been represented; an approach more likely to balance out discipline-specific biases.

Each discipline considered important to canine welfare (and relevant to Great Britain) was represented by an independent expert. The number of experts on our panel was comparable with other panel studies (5–12; Houpt *et al* 2007; Timmins *et al* 2007). Sample sizes for anonymous questionnaires are often larger (9–96; Whay *et al* 2003; Leach *et al* 2008; More *et al* 2010; Yeates & Main 2011), though consensus through active discussion, clarification and feedback is known to improve agreement (Khodyakov *et al* 2011). Resources were not sufficient to employ several experts to represent each discipline, and whilst increasing the number of experts in the panel may have strengthened our findings, there is a trade-off between panel size and diversity in obtaining collective accuracy in group decision-making (Krause & Douglas 2013). Further, companion animal welfare is a niche and relatively small field, with considerable overlap between each discipline, thus the experts had some knowledge (though not specialist knowledge) of other disciplines, allowing valid and comprehensive discussions for the range of welfare issues. While it is possible that a different combination of experts may have altered the prioritisation of welfare issues, the risk was reduced since the experts were selected to represent the current knowledge, and experienced professional judgements of their speciality. In addition, the use of the initial task ensured that experts had considered the issues prior to the workshop, which may have enriched discussions and ultimately improved agreement. Although a different method for prioritisation was used in the two tasks, there was considerable agreement between the results of the individual task and the group discussion — those assigned to category A (of utmost importance) scored highest for WP, accounting for panel revisions of the issues.

Effective prioritisation of the extensive and diverse range of welfare issues was hindered, in part, by the non-standardised format of the titles and descriptions of these issues. In particular, descriptions from the stakeholders' open-text responses differed in specificity, and the welfare consequences of some issues were unclear. It was important to maintain objectivity and avoid researcher bias in editing the list of welfare issues, thus we asked the panel to revise the definitions and scope of the welfare issues so that each specific issue held unique welfare consequences (eg obese and overweight dogs), though, in reality, each issue may not be completely distinct, and inter-relations between issues occur. Addressing only the specific consequences may be equivalent to addressing the symptoms, but not the cause. Therefore, it was also necessary to retain the broader issues that described many welfare consequences related to and/or arising from a common instigating source (eg lack of owner knowledge), such that these broader issues could be included within the prioritisation task. Within our list, certain factors — such as lack of owner knowledge and irresponsible ownership — contribute to many other issues. For example, lack of owner knowledge may contribute to inappropriate socialisation, inappropriate husbandry, obesity or overweight dogs or undesirable behaviours; though these specific issues have additional contributing factors. Welfare issues may be tackled by prevention, cure or both, and where broad factors, such as lack of owner knowledge and irresponsible ownership are to be targeted in line with prevention, for example through education, it becomes equally important to know which specific issues are of higher priority so that educational resources are targeted, relevant and applicable for the improvement of welfare. Encouraging responsibility in a broader sense still has a wider value for welfare and society.

Systematic animal welfare assessments use defined criteria to calculate aggregate scores (eg Broom 1998; Scott *et al* 2003; FAWC 2006). The commonly used criteria of severity, duration and prevalence (eg Kirkwood *et al* 1994; Whay *et al* 2003; Collins *et al* 2010) provided the foundation for our WP scores. An additional criterion — counterbalancing benefits — was also factored into WP scores, to account for potential benefits to the individual dog of the welfare issue described, highlighting the complexity of welfare issues related to companion animals (McGreevy & Bennett 2010). Only the welfare cost of treatment scored relatively highly for this criterion, given the obvious benefits for the dog to receive required veterinary treatment, although there remains important welfare implications of the treatment (eg pain, stress, side-effects of treatement; Christiansen & Forkman 2007). Anthropogenicity, ethical significance and confidence were not included within aggregate scores, but provide additional descriptive information for further consideration of the relative prioritisation of welfare issues and implementation of any actions on this basis. Anthropogenicity scores did not discriminate between issues, since the majority of welfare issues for companion dogs were judged to be mostly caused by human influence. This is perhaps not surprising for a domesticated species, and one that shares a close relationship with humans (Clutton-Brock 1995). However, it has implications for welfare management, since changes in societal attitudes towards the way we treat animals may be required (Hens 2009). With regard to ethical significance, experts considered other ethical factors not associated with the welfare of the animal, such as moral or societal considerations. Where

ethical significance was rated high, these issues were deemed to have wider significance within society. For example, a lack of neutering has a societal impact on resources required for the care of resultant offspring, whilst it could be argued that it is beneficial in terms of 'telos' and the animal's right to reproduce (Palmer *et al* 2012). Scores for the confidence criterion reflected whether the experts felt that their opinions were accurate, based on current information and understanding. Scientific data were scarce, or not available for certain issues, such as fighting, weapon and accessory dogs, media influence, long-distance travel and irresponsible ownership; thus experts' confidence in their judgements was lower for these issues. Scientific investigation and cultural consideration were also regarded as key to welfare improvement in an international canine welfare discussion (Houpt *et al* 2007).

Information on which welfare issues should be prioritised for both welfare importance and degree of tractability is critical to aid decisions on welfare improvement strategies for Government, charities, research bodies or other welfare organisations. Three issues of the highest priority, relative to all others, were identified by experts in the current study: inappropriate husbandry, lack of owner knowledge, and undesirable behaviours, with a further four identified as of secondary importance: inappropriate socialisation, inherited disease, conformation-related disorders and obese and overweight dogs. These findings are comparable to other prioritisation tasks: by veterinary stakeholders (Yeates & Main 2011) and by stakeholders in Veterinary, Charity, Industry, Government and Education sectors (Buckland *et al* 2013). Chronic pain/poor mobility, lack of treatment for suffering, cruelty (Yeates & Main 2011), puppy farming, status dogs and lack of appropriate mental stimulation (Buckland *et al* 2013) were also regarded important in other studies; according to the more standardised and transparent prioritisation criteria, the experts in our study did not regard these as priority welfare issues, relative to the other issues considered in the assessment.

Strategic decisions may be made to address those issues with high tractability first, to optimise success whilst continuing to research those issues that are less easy to resolve. The experts in this study were not required to propose specific solutions to the welfare issues discussed, and their scores for tractability should be considered with caution. Tractability depends upon the effectiveness of targeted efforts, and public willingness to change: an issue with a high welfare problem score may not necessarily be solvable, as our results suggest since the relative rank of specific issues differed between WP and SP. Those issues deemed more tractable may be relatively less complex and may have simpler paths to resolution; for example, conformation-related disorders and inherited disease solely relate to health and breeding practises and may be rectified by introducing responsible breeding practices with more legislative control (see recommendations outlined in Bateson 2010). In contrast, the tractability of issues related, for example, to inappropriate husbandry, lack of owner

knowledge and obesity is not straightforward. Normative expectations may predict owners' compliance with responsible husbandry practises (Rohlf *et al* 2010), suggesting societal and cultural views play a role. Addressing owner knowledge, as a whole, requires changes in attitude and expectations (King *et al* 2009), and the ability to ensure only accurate information is available. Obesity has been previously discussed as an issue which may be resistant to successful long-term resolution, due to the human-specific factors that play a large role in management of the problem, such as attitude, diet and exercise (Bland *et al* 2009).

Animal welfare implications

Prioritisation of welfare issues is important to aid strategic decisions on how best to allocate often limited resources to those issues of most concern to the welfare of companion dogs.

Conclusion

Recruitment of an interdisciplinary panel of experts can provide valuable consensus on the relative priority of a broad spectrum of welfare issues. Experts can make informed recommendations about animal welfare issues, based on their experience. This is particularly important where scientific data are lacking due to the absence of national monitoring. Not all priority welfare concerns are easily resolved, and others require further research on the actual welfare impact before priority assessments can be made in confidence.

Acknowledgements

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