

'Street Dog' Population Control

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Case study prepared as part of examination for Royal College of Veterinary Surgeons (UK) Certificate in Welfare. Based on experience while working at the Help in Suffering Sanctuary in Jaipur, Rajasthan, India.

Introduction

This case study provides an introduction and overview to 'Street Dogs' and some of the issues that arise in our relationships with them. It asks what a street dog is, and looks at the different views taken about them. In doing so it questions assumptions made about the place of dogs in our society and what constitutes good welfare from a dog's point of view. It also discusses street dog population control, specifically setting out to answer the question: 'Is surgical neutering of 'street dogs' in developing cities, such as Jaipur, an acceptable method of controlling their population?'

Background

What is a 'street dog'?

In Britain we tend to neatly categorize dogs as either 'pets' or 'stray' depending on their ownership status. This classification is oversimplified and inappropriate for many urban areas in 'developing' countries. Here, there is often a history of 'street' animals that are not 'owned' by or considered to be the responsibility of any particular individual. For example, human residents of Jaipur have a wide range of relationships with 'street dogs' - from avoidance due to fear and dislike, through to coexistence and tolerance, to symbiosis. Such attitudes directly affect dog ecology and vary between areas of the city, different streets and even within the same street.

The World Health Organisation (WHO) has highlighted this complexity by establishing a matrix of dog categories based on the dog's level of dependence (i.e. intentional provision of resources) and level of restriction by man (50). These are

1. Restricted (supervised) dogs - fully dependant and fully restricted by man
2. Family dogs - fully dependent and semi-restricted
3. Neighbourhood dogs - semi-dependent and semi-restricted
4. Unrestricted (unsupervised) dogs - semi-dependent and unrestricted
5. Feral dogs - independent and unrestricted

In reality there is a gradation from 1 to 5.

The term 'street' dog used in this report refers to categories 2, 3, 4 and 5, though in reality very few urban dogs fall into category 5.

Such street dogs often retain a large degree of autonomy - society does not have the same responsibility and liability expectations of pet ownership that are evident in Britain.

Category 1, similar to the Western model of pet ownership, is a relatively new but growing concept in Jaipur. It is mainly largely reserved for particular breeds that are perceived to be 'special' such as Dobermans and German Shepherds.

Why are street dogs present in such high numbers?

Street dogs are not reproductively capable of maintaining their population density unless food and harbourage are provided by man (16). Such provision may be intentional or non-intentional, in the form of open garbage dumps and empty buildings. In particular, intentional human care for pups greatly reduces their mortality in the early months of life (16).

Why control the street dog population?

Both human and animal welfare are given as reasons for controlling street dog numbers. Spread of zoonoses (diseases that can spread from animals to people) is a particular problem where high densities of dogs and humans live in close association (50) and, in India, rabies is a major concern. 99% of human cases of this fatal disease are transmitted in the saliva of infected dog bites (50). Other animals, such as herbivores, are also susceptible but do not have the propensity to bite and are hence less of a threat to humans.

Dog welfare is likely to be poor if the population is not controlled (6). This is due to competition for limited resources leading to malnourishment in some individuals, particularly in pregnant and lactating bitches and also a high rate of spread of infectious disease and parasites(6).

What approaches have been used to try and control the street dog population?

Up until recently, control has often been by slaughter. Government authorities have caught and killed the dogs at designated sites or poisoned them in situ. The staff involved usually do not have the training, facilities or motivation to carry out this task humanely. Many dogs are injured during capture and methods of killing are unacceptable. Poisoning with strychnine is common, as is beating, crushing or electrocution of groups of dogs.

In addition, killing large numbers of healthy dogs is ethically very questionable (see later under ethical analysis).

The World Health Organisation (WHO) now recognises that slaughter often produces a short term effect. Even maximal catching rates (up to 24% of dog population per year) make no significant impact (50, 48). Where dogs are removed others migrate into the area to fill the ecological niche (41).

In addition, killing is expensive and often not acceptable to the local community (48, 50).

Recent recommendations advocate habitat control and control of the birth rate by surgical neutering (50).

What are Animal Birth Control (ABC) Programmes?

ABC programmes have been advocated as a humane method of stabilizing the dog population and rabies control.

Street dogs are captured, surgically neutered, vaccinated against rabies and re-released in the same area where they were caught. The aim is to produce a smaller, healthier, more stable street dog population in which rabies is better controlled.

ABC programmes are underway in many places around the world. In India this includes the cities of Madras, Hyderabad, Bangalore, Calcutta, Bombay, Delhi and Jaipur.

Surgical neutering of dogs is necessary as it is the only 100% effective, long term method of causing infertility. This may change in future if parenteral hormone, chemical or immunomodulation means of causing infertility are further developed (56).

Whilst, in Britain, we are well experienced in neutering fully supervised 'pet' dogs, different welfare and ethical considerations will arise when extrapolating this ethos to the street dog population.

Method of investigation

The author was involved in all aspects of an ABC programme based in Jaipur for 16 months. Similar programmes in Mumbai and Hyderabad were visited.

Detail of the Jaipur project protocol may be found in Appendix 1 (note the Appendix is currently not available on this web copy).

Viewpoints

The general public view the dogs in a variety of ways as already mentioned. They may be

- seen as a health risk or 'vermin', due to a fear of rabies, other diseases and bites(2). (however, it is interesting to note that in the US, studies show bites are actually more frequent and more serious from pet dogs than from strays (58))
- considered a nuisance by 'getting in the way' of human activities. Complaints are generally made about groups of dogs (16), whereas those solitary or in pairs are largely ignored. Street dogs do not form true 'packs' but tend to group only when males are attracted to a single female in heat (16). Neutering should reduce this nuisance factor
- largely ignored or tolerated

- appreciated for the human benefits they provide such as companionship and protection of property or the neighbourhood against intruders
- seen as having a right and a place to exist independently of any human benefits

As a consequence, there was opposition in some streets to removal of dogs, whilst in others there was opposition to them being returned. Most people were satisfied once the ABC programme was explained, highlighting the need for greater community awareness of and involvement in the project.

Most members of society did not want the dogs to be killed. Local culture is influenced by the belief that it is God's decision to take a life, not man's, and killing should be avoided unless absolutely necessary. This philosophy is reflected in the 'no kill policy', even for sick and injured animals, of the local SPCA and other animal sanctuaries visited.

Surgical neutering of dogs appeared well accepted. Human population control and health care campaigns may have helped raise awareness of this concept.

Animal welfare organisations such as World Society for the Protection of Animals (WSPA), Animal Welfare Board of India (AWBI), SPCA's and local NGO's advocate the programmes for their animal welfare benefits

1. to avoid the harms of overpopulation if no intervention were to take place
2. to avoid the serious harms of capture and kill by government authorities
3. because the dogs are seen as having their own interests and a right to live, and that even humane capture and kill of healthy animals should be avoided (57)

The World Health Organisation (WHO) are interested in human health issues, in particular rabies control. There is little in their reports that concerns animal welfare or ethics.

The local Government authority (or 'municipality'), as with many established bureaucratic organisations has an inbuilt resistance to change - a whole infrastructure has been developed to carry out capture and killing and jobs are at stake. Also, they are under pressure to remove dogs by some sectors of the community.

Co-operation of government authorities with ABC programmes varies greatly between different cities, even though there is a common aim in controlling the dog population, and government resources are often not available for programme use. Even where the municipality has verbally agreed not to kill dogs and to transfer any caught following complaints to the ABC programme, there have been anecdotal reports of them not following this through.

Welfare Assessment

If ABC programmes are managed well they may have many benefits for dogs and humans, as already mentioned. If done badly, they may be almost as harmful as the alternatives used.

It may be difficult to find the baseline information needed for proper planning of programme protocols. For example, in Rajasthan, vets receive little instruction and experience in small animal medicine, surgery and welfare, their training concentrating largely on agricultural and draught animals.

In contrast, in Britain considerable experience has been gained in neutering pet dogs. Relevant techniques and potential complications are well-documented. However, there are very different factors to consider when extrapolating this neutering ethos to the 'street dog' situation. What is considered 'optimal' for welfare in the restricted, supervised pet dog situation may not be achievable, or appropriate, in the ABC programme due to various limitations, such as finance, availability of materials and staff calibre.

A course of action has to be chosen that optimises welfare and programme success, while recognising that the alternative is capture and (usually brutal) kill.

Examples

1. Programme staff

- The influences of staff attitude and training on welfare are well recognised. In India, there is no equivalent of the veterinary nurses found in the UK. The staff involved in capture and care of the animals, or 'compounders' are generally poorly paid, poorly educated and may be little motivated by the job. Their task may be perceived to be dirty and menial by members of the public. Even so, some are highly skilled and experienced workers.
- The programme, individual tasks and material used must be designed with realistic expectations of what staff may achieve.
- Training is something that can readily be provided and can improve welfare. If possible, it should encourage staff to feel more valued and develop greater self respect.
- For instance, improving handling techniques will break the vicious cycle of fear that develops whereby the animal is poorly handled, becomes aggressive as a result, staff become increasingly afraid and hence handling worsens. In practice, stimulating motivation and interest in the job proved much more difficult than expected. Ultimately, constant supervision remained necessary. However, in recent years considerable effort has been made to raise the status and desirability of the work, for example by providing decent living accommodation as part of the employment package. Both the welfare of the workers and the welfare of the street dogs have improved as a result.

2. Anaesthesia

The Jaipur programme used injectable anaesthesia rather than gaseous, even though the anaesthetic risk is greater and recovery much longer (10). Reasons

- gaseous anaesthesia is expensive and not available locally
- gaseous anaesthesia is not as simple to use
- gaseous anaesthesia requires intubation of the animal and handling of dogs mouths is better avoided in a rabies endemic area
- health and safety - there are not facilities for scavenging gases and maintaining equipment.

3. Sterility

There is some compromise of sterility. To enable high numbers of operations to be completed the same surgical pack is used for 5-6 dogs.

4. Surgical approach for ovariohysterectomy (OVH)

OVH can be performed through a mid-line or flank incision into the abdomen. A midline approach is easier, less traumatic and is associated with less post-operative pain than the flank approach, which involves incising three muscle layers (5). Also, any intra-operative haemorrhage is more easily controlled.

However, although the midline approach is commonly used in pet dogs (9), the ABC programme often chooses a flank approach. Reasons

- Flank incisions have a lower risk of herniation if dogs are active sooner after surgery, whereas the opposite is true for mid-line incisions. Street dogs do not have the luxury of much post-operative care, so need to have a wound that can cope with early exercise.
- Mid-line incisions require stronger stitching, preferably using synthetic absorbable sutures, such as vicryl and PDS, which are too expensive. Catgut, which is fine for stitching flank incisions, is much cheaper and more readily available.
- Cheaper, non-absorbable, alternatives to catgut, such as monofilament nylon, are better avoided where there is a high risk of post-operative infection, as is the case when operative sterility is compromised.

It is possible the balance of pros and cons may be in favour of using monofilament nylon and midline approach for spaying heavily pregnant bitches, as here the flank approach is much more traumatic and painful than for a routine spay. This needs to be further studied.

5. Why full OVH?

Full OVH is more surgically complicated than ovariectomy or ligation of uterine tubules (20). At first glance these may seem the better options in view of the need to maintain high numbers of operations. However, ovariectomy is only quicker if done via a midline approach, because a bilateral flank approach would be required. Ligation of uterine tubes would be a rapid technique but the bitch would continue to cycle, with the associated nuisance factor of groups of dogs.

A word of caution

Not every decision can be justified because the alternative of capture and kill are so much worse. There are certain minimum standards of welfare acceptable and the actions of the municipality should not be used as a benchmark against which everything else is measured.

Example: Dog catching

Capture techniques using choke chains and ropes, that were initially being used in the programme, should be avoided. Although no worse than the municipality techniques they cause the animal pain, distress and injury and may be considered unacceptable for use by a welfare organisation. This is for 2 main reasons, firstly the animal suffers unnecessarily, and secondly, the function of the organisation should involve setting examples and improving attitudes to animals. Alternatives involving the sack and loop method with or without the catching pole have since been developed.

Other Points

We are on a steep learning curve regarding ABC programmes and methods need to be kept under constant critical review. Our knowledge about street dogs is incomplete. Few studies of street dog ecology have been undertaken (15, 6, 34), and none could be found relating to the effects of neutering on their ecology and welfare. Various assumptions have been made when planning the ABC programme, the validity of which needs to be tested if welfare is to be improved.

Examples of assumptions

1. That females only should be neutered

Males were not being castrated in the Jaipur programme, partly for cost/ benefit reasons but partly due to the idea they will become less territorial and more easily displaced by entire dogs migrating into the area. However, it is possible that other factors, such as strength of the human-dog bond, may have a greater influence on dog ecology (2, 15) than testosterone.

2. That neutering should start at 3-4 months age

More work needs to be done on the best age at which to neuter street dogs.

Pet dogs may be neutered as early as 7-8 weeks with no adverse effects on their physical

and social development (33) but they are not exposed to the same stresses and hazards as a free ranging street pup. Hence, the decision has been made not to neuter street pups until they are at least 3-4months old because the street pups are not independent of (and maybe should not be separated from) adult care until they are 4 months old (14). Street pup mortality is already high in the early months of life (14). We need to know if the surgery at this early age significantly reduces their welfare and survival chances.

3. That the policy of releasing dogs into the a same area of the city where they were caught, but not the same street, is adequate

Whereas this may not pose a problem for adult dogs due to their larger size of home range, the small home range of the pup (16) may mean it is displaced from familiar resources. Perhaps improving accuracy of releasing will improve the welfare and possibly the survival rate of these younger dogs.

4. That neutered dogs may be released 3-5 days post-operatively

Neutered dogs are being released prematurely from the veterinary surgeons care i.e. before the wound has completely healed. The environment is very different to that of a pet dog - it is dirty and the dogs are active and unsupervised. This poses additional hazards.

We don't know the extent to which post-operative problems, such as wound dehiscence, seromas, infections, stump granulomas (18) occur or the extent to which post-operative pain/hyperalgesia affects the animals' ability to cope on the street.

Balancing the need to maintain a high operation rate and the stress of being kennelled against the risk of harm from post-operative complications is difficult.

5. Effect of neutering on dog social interactions

We do not know a great deal about the social interactions and bonds of formed by street dogs with their conspecifics (16, 15, 34, 31). We know even less about how neutering affects social interaction of the street dogs and the welfare consequences of this.

Finally, decisions need to be made on a sound knowledge of appropriate veterinary practice, dog ecology and local human social attitudes. Sentiment, anthropomorphism and professional arrogance are all potential dangers.

Alternative investigations

It would also be useful to investigate

- the incidence of post-op complications once released
- the effect of neutering on street dog ecology, particularly social interactions
- human attitudes to street dogs and whether these change as a result of the programme

- a comparative behavioural study of street dogs in a situation where they are completely uncontrolled and in a situation where they are controlled with the ABC programme

Alternative strategies

The most useful development of the programme would probably come from greater community involvement in the programme. For example

- discussion about the longer term aims of the programme
- involvement in confining dogs they associate with to aid capture by programme staff
- in observing for post-operative problems/other problems and contacting the shelter

Legal aspects

In India, 'captive' and 'domestic' animals are protected under the Prevention of Cruelty to Animals Act 1960.

The wording of the Act section 1.1 (see Appendix 2) is very similar to section 1.1(a) of the Protection of Animals Act 1912 (Scotland 1912) i.e. there is the same concept of causing unnecessary suffering being an offence. However, general enforcement of this law is poor.

Also, under section 1.1, paragraph 3, dogs destroyed in "lethal chambers" are exempt from this protection.

The Animal Welfare Board of India (AWBI) is a government body established under the Act, with the aim of promoting animal welfare. The functions of the AWBI include

- revising the anti-cruelty legislation
- advising the government on amendments and making of rules under the Act
- giving financial and other assistance to animal welfare organisations and to co-ordinating these organisations
- encourage human education in relation to animals

However, the activities of the AWBI are restricted by a lack of funding and the problems of one small organisation being required to serve the whole of India (personal communication, General L. K. Chatterjee, Head of AWBI 1998)

The Prevention of Cruelty (Capture of Animals) Rules 1972 have been made under the Act.

These specify that the animal must be caught by the "sack and loop" method, currently used by ABC programme staff, who have shown this method can be practical and successful.

The municipality are in breach of this legislation by using metal tongs for catching.

The Transport of Animals Rules 1978 specifies how the dogs must be transported. The conditions are largely satisfied by the programme. One aspect, that no dog in an advanced stage of pregnancy shall be transported is regularly ignored.

Ethical analysis

The argument for street dog population control can be examined from both human and animal welfare angles.

The human welfare argument usually revolves around the spread of zoonotic disease and the dangers of being bitten by uncontrolled animals (though research suggests that domesticated dogs cause more and more serious bite injuries than feral dogs).

The animal welfare argument rests on the assumption that disease and death in uncontrolled populations of dogs causes suffering that outweighs that associated with control programmes.

Opinions about this are influenced by culture and differing views about the fundamental values associated with such things as freedom, existence, and suffering. ABC programmes need to be aware that cultural viewpoints, eg differences between western and eastern philosophies, can influence the long term aim of a programme. In particular there is a danger of following the western model of pet ownership, assuming this is the 'right way', that dogs should live only as pets and completely on human terms. While it is true that the life-span of a street dog is less than that of well cared pet dogs (64), longevity is only one measure of welfare. The quality of life of the street dog that retains its autonomy may be comparable or even better than that of many pet dogs. Stress is recognised as a significant welfare problem in over-confined pet dogs. The tightly controlled breeding that often accompanies the pet model of dog ownership also causes welfare problems, such as breed related disorders, including behavioural and obstetric problems.

Whatever our cultural outlook, we may never fully be able to appreciate what a street dog gains from its life experiences. We do not know whether animal minds possess qualities of human consciousness such as awareness of self and of existing over time, yet even if they do not, this does not make their lives valueless.

Dogs are sentient creatures and to disregard their suffering simply because they are a member of a different species is speciesist (37). Nevertheless, who are we to decide that an animal's life is not worth living? It can be obvious that a dog is suffering, and some feel in these cases that there is a role for humane euthanasia. Others feel that euthanasia is unacceptable in any situation.

Dog population control can be justified because (as already discussed) the over-population of dogs is created and supported by the abundance of resources humans provide, so that it is, in a sense, a 'man-made' problem.

If it is decided that intervention is necessary, other ethical problems arise. The most fundamental is whether numbers should be controlled by killing or birth control.

In many cities around the world, killing of the dogs has been seen as the intervention of choice.

In addition to the above arguments about whether it is right to kill dogs or not, this is unfortunate for a number of reasons, which affect both human and animal welfare

- studies show that it does not work as a long term method of dog population control because it is not possible to eliminate all the dogs, and that other dogs soon re-populate cleared areas, worsening the spread of diseases such as rabies
- it is therefore wasteful of resources and counter-productive in the control of zoonotic diseases
- methods of capture, restraint and euthanasia are often cruel and involve great suffering for the dogs
- Kant and Gandhi have both commented that brutality in dealing with animals leads to brutality in dealings with fellow man, an opinion now supported by criminology research (eg Kellert, Felthous)
- elimination of street dogs ignores the role they may be playing as companions to the poorest members of the community who are unable to keep dogs as pets, providing them with protection, warmth and companionship.

In contrast to municipality killings, ABC programmes, when done well, have the potential to improve both human and animal welfare and avoid the ethical and welfare issues raised above. However, as the programme continues, new ethical and welfare issues must be considered. This is because humans have additional responsibilities towards the dogs once they have intervened in their lives by neutering them.

Some of the problems that have to be balanced have been mentioned above, such as the release of dogs from veterinary care before treatment/wound healing and convalescence are complete. Is it acceptable to let the animal 'take its chance' regarding post-op complications. However, that potential harm is balanced by the reduced stress to the dog of returning quickly to its home territory and the minimising of social disruption.

How do we balance the welfare of individual dogs against the overall success and benefits of the programme? Economic and practical considerations have to be taken into consideration, although there must be minimum standards for individual animal welfare which no economic or practical arguments can justify dropping below.

It is difficult to arrive at ethical absolutes in cases such as these. It is probably enough to be aware that harms (ABC programmes will always cause a degree of suffering to individual animals) and benefits are being weighed against other practical constraints, and that this awareness is guiding research into unknown aspects of any programme.

Conclusion

ABC programmes, if done well, appear to have the potential to promote both dog and human welfare. However, caution is needed. There needs to be ongoing critical analysis of the programme and any assumptions should be further investigated. The short to medium term aims of the programme are to create a stable, friendlier, healthier street dog population. However, the city society is changing and there needs to be public debate about the longer term aims of the programme - whether the Western model of pet ownership should really be promoted or whether a different model, with dogs remaining a general society responsibility, is advocated.

Useful contacts

An ABC training video has been developed by Dr. Sunil Chawla, Jack Reece (MRCVS) and HIS staff.

For further details contact: Dr. Sunil Chawla or Jack Reece at Help in Suffering, Maharani Farm, Durgapura, Jaipur, Rajasthan, India

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