

ASSESSMENT OF OWNER'S PERCEPTION CONCERNING ROLE OF NEUTERING AND SPAYING IN WELFARE OF DOGS

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Abstract

The study involved 400 non-sterilized dogs (232 males, 168 females) and 300 sterilized dogs (123 males, 177 females). Both groups have been divided in three subgroups: purebred, crossbreed and adopted community dogs. Four pathological events were questioned and correlated with spaying and neutering: obesity, pyometra, nervous lactation after pseudo-pregnancy and prostatic hyperplasia.

In our study, reproductive disorders imposed the sterilization in 127 dogs (51.18% males, 48.81% females), of which: 37.00% (47/127) purebred, 41.74% (53/127) crossbreed and 21.26% (27/127) adopted community dogs. Prevalence of obesity was 18.40% (46/250) in purebred, 30.00% (72/250) in crossbred and 18.00% (36/200) in adopted community dogs. A correlation between obesity and sterilization in the population of dogs studied was not observed. Pyometra prevalence was 21.05% (24/114) in purebred, 18.26% (21/115) in crossbred and 16.19% (17/105) in adopted community bitch. Nervous lactation prevalence was 71.05% (81/114) in purebred, 58.26% (67/115) in crossbred and 19.05% (20/105) in adopted community bitch. Prevalence of prostatic hyperplasia was 10.29% (14/136) in purebred, 2.22% (3/135) in crossbred and 7.37% (7/95) in adopted community dogs. The highest prostatic diseases in group of purebred males were correlated with sterilization in old ages (86.95% after 2 years age). The low prevalence of prostatic diseases in crossbred and community males were correlated with high proportion of early age neutered dog (58% before 2 years age). Therefore, early sterilization of non-breeding dogs could be a good decision to reduce the unnecessary distress associated with reproductive pathology.

Key words: *animal health, dog hygiene, pest control, vaccination.*

INTRODUCTION

Analysed often enough in terms of its impact on the quality of the animal life, sterilization continues to suscite polemic when is carried out on request and not out of necessity (Arkow, 1998; Fielding *et al.*, 2002; Fوسفeld, 2007). Among the advantages of sterilization, reducing the reproductive apparatus related diseases and breast neoplasia, reducing the associated pregnancy and parturition pathologies, such as metritis, mastitis and dystocia, reducing the hormono-dependent disorders and mammary hypertrophy and reducing the unwanted sexual behaviour are included (Romagnoli, 2008).

Among the disadvantages of sterilization can be retained: anesthesia and surgical complications, increased risk of malignancies of various apparatus and systems of organs, increased incidence of musculoskeletal and endocrine disorders, obesity and urinary incontinence (Angioletti *et al.*, 2004; Brodbelt, 2009; Burrow *et al.*, 2005; Knapp *et al.*, 2000; Pollari *et al.*, 1996).

In this context, evaluation of owners' perception about the sterilization advantages and disadvantages, knowledge the age at which owners prefers to sterilize their dog, the reason of sterilization and the main pathological events correlated with reproductive system can be helpful in assessing animal welfare.

This study was designed to give key information about the owner's knowledge of dog welfare and the role of sterilization in welfare.

MATERIALS AND METHODS

Seven hundred questionnaires completed by dogs' owners from Bucharest have been reviewed in order to assess the effect of the dog sterilization/non-sterilization on welfare.

The descriptive epidemiological study involved 400 non-sterilized dogs (232 males, 168 females) and 300 sterilized dogs (123 males, 177 females). Both groups have been divided in three subgroups: purebred, crossbred and adopted community dogs. Purebred group included dogs with known origin, declared by owner with both parents from the same breed. Crossbred group included dogs with known origin, declared by owner with parents from different breeds. Community dogs group included adopted dogs, declared by owner without known origin. For the sterilized animals were determined the age of animals at that time and the reason of sterilization.

The survey form contained questions designed to determine the owners' knowledge in dog welfare issues and to obtain information about how owners care for their dogs in correlation with reproductive system. Also, questionnaire contained questions about four pathological events that could be correlated with female spaying or male neutering: obesity, pyometra, nervous lactation after pseudo pregnancy and prostatic hyperplasia.

RESULTS AND DISCUSSIONS

Interviews with 700 owners in Bucharest city indicated that many people have a limited knowledge of the law and animal welfare issues and welfare

perception is heterogeneous and even contradictory from one owner to another.

Out of the total of females that were not sterilized, 48.00% (81/168) were purebred, 39.88% (67/168) were crossbred, and 12.12% (20/168) were adopted community dogs (figures 1 and 2). Considering the high female reproductive value of pure breeds, research pursued and identified the reasons that led to the rather large percentage of purebred females that were sterilized, 28.95% (33/114), respectively, out of the total purebred females that were subject to this survey.

Decision to sterilize the purebred females (44/125) was taken in 77.77% (34/44) of cases after the age of 24 months, whereas in 54.54% (24/44) of cases the decision was taken out of necessity (figure 3). In contrast, adopted community female category was dominated by sterilized specimens, representing 80.95% (85/105). Sterilization in adopted community females was decided for 82.35 % (70/85) before the age of 24 months, 80% (68/85) was decided upon request and only 20% (17/85) out of necessity. It is important to note the polarization of the decision to perform castration depending on the category of breeds: out of 115 females sterilized upon request, 17.39% (20/115) were purebred, 23.48% (27/115) crossbred, and 59.13% (68/115) adopted community females; out of 62 females sterilized out of necessity, 38.71% (24/62) were purebred, 33.87% (21/62) crossbred, and 27.42% (17/62) adopted community females (figure 4).

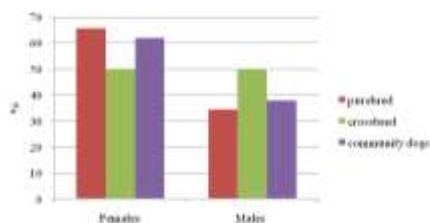


Figure 1. Proportion of neutered dogs

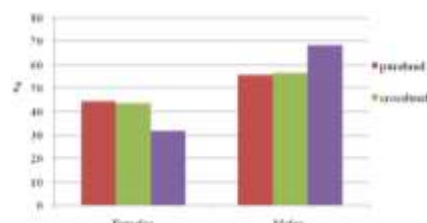


Figure 2. Proportion of non-neutered dogs

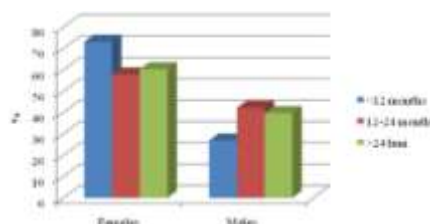


Figure 3. Proportion of the age groups when dogs are sterilized

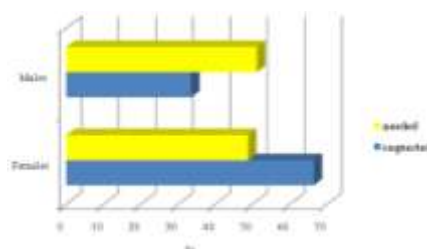


Figure 4. Motivation of dogs' sterilization

Prevalence of obesity, pyometra, nervous lactation after pseudo pregnancy, prostatic hyperplasia and cryptorchidism are listed in table 1.

Table 1. Morbid conditions diagnosed in the population of dogs investigated

Pathological issues	Dogs							
	Total		Purebred		Crossbred		Adopted community dogs	
	No.	%	No.	%	No.	%	No.	%
Obesity	154/700	22.00	46/154	29.87	72/154	46.75	36/154	23.38
Pyometer	62/345	17.97	24/62	38.71	21/62	33.87	17/62	27.42
False lactation	168/345	48.70	81/168	48.21	67/168	39.89	20/168	11.90
Prostate hyperplasia	24/355	6.76	14/24	58.33	3/24	12.5	7/24	29.17
Cryptorchidism	12/355	3.38	9/12	75.00	3/12	25.00	0/12	0.00

Out of the 700 dogs evaluated, 22% (154/700) were declared by owners as obese. It is noted that 46.75% (72/154) of cases of obesity belonged to crossbred, and the remainder in roughly equal proportions of other categories, 29.87% (46/154) purebred and 23.38% (36/154) of adopted community dogs. This situation might be due to either overeating, lack of movement, or a combination of these. Analyzing environmental conditions offered, it appears that most dogs stay in apartments (77.71%, 544/700); restriction of movement in house may play a role in apparition of obesity, especially if the food intake is not correlated with the status of sedentary; also, it observed that 55.29% of dogs received rewards between meals.

Obesity seems to be one of the most common issues raised by veterinarians in the United Kingdom (Yeates and Main, 2011). Other retrospective studies have singled out a prevalence of obesity in the canine population of up to 2.80% (Mason, 1970; David and Rajendran, 1980). In the present study, the main contributory factors of obesity are sterilization in association with living in apartments. Other risk factors of obesity have also been reported, such as old age, overweight owners or owners older than 40 years, as well as the breed of the dog (Colliard, 2006). Breeds with highest risk of becoming obese are Beagle, Cairn Terrier, Cavalier King Charles Spaniel, and Labrador Retriever (Mason, 1970; Edney and Smith 1986; Crane, 1991; Colliard, 2006).

Nervous lactation or pseudo-gestation was recorded in surveys by 50.29% (168/334) owners of females out of which 24.25% (81/334) owned purebred females, 20.05% (67/334) crossbred, and 5.99% (20/334) adopted community females. The prevalence of false lactation was of 71.05%

(81/114) in purebred, 58.26% (67/115) crossbred and 19.05% (20/105) adopted community females.

Pyometra seems to be a rather serious problem in the population of females included in the research (18.56% 62/334), however it was smaller than in other studies (Hagman *et al.*, 2011) and was not associated with postsurgery morbidity or mortality (Johnston *et al.*, 2001). Pyometra was most frequently detected in purebred females (38.71%, 24/62), but the difference was not large compared to the crossbred females (33.87, 21/62), and adopted community females (27.42, 17/62). Placing purebred females and crossbred on the first two positions is also correlated with increased proportion of sterilized females aged over 10 years in these categories. It is known that the incidence of pyometra in female dogs that were not sterilized after the age of 10 years is of 24-25% (Hagman *et al.*, 2011). In this study it was noticed that the prevalence of pyometra was of 21.05% (24/114) for purebred, 18.26% (21/115) for crossbred, and 16.19% (17/105) for adopted community females.

Correlating these data with the data presented above, pyometra was the only cause of necessary sterilization of females. This is considered the method of restoration in the shortest time of the welfare of the females, with the lowest medical risks. Although the prevalence of nervous lactation was recorded for over half of the females, a correlation between nervous lactation and the decision of sterilization, including dogs already sterilized, could not be made.

The decision-making mechanism of male sterilization is largely the same to that observed in females. In purebred male stands absence of sterilization on demand (0/23), all cases are the result of conditions that imposed sterilization in order to restore those dogs' welfare as soon as possible. However, males that were not sterilized present an increased risk for the development of many diseases in old age, such as testicular cancer and prostate diseases; therefore, the recommended age for sterilization is six months (Dodman, 1999). 65.35% (232/355) out of the males were not sterilized, where 43.97% (102/232) were purebred dogs, 37.5% (87/232) crossbred, and only 18.53% (43/232) adopted community dogs. As for the females, there is the same tendency to decide upon sterilization mainly within the first 24 months of life for adopted community females (80.79%, 42/52), and mainly after 24 months of life (86.95%, 20/23) for purebred females.

In addition to health problems, the males that were not sterilized may create behavioral problems to their owners, due to elevated levels of testosterone.

Dogs can perceive the smell of a female in heat from great distances and will try to escape the leash or the courtyard, running free and thereby exposing themselves to the risk of accidents, fights with other males for dominance, and even abandon (Dodman, 1999). Even more, if they fail to escape, some males that are not sterilized can express aggression or other unwanted behaviors on their owners (Overall, 1997; Murray, 2008). Generally, sterilized dogs integrate better as pets. It is considered that by sterilizing the risk to escape from the courtyard or from the leash drops by 90%, aggression towards other males, dominant aggression and marking and with urine instinct drops by 60% (Landsberg, 1997). However, sterilization should not be used as a substitute for appropriate training. In some cases, sterilization rather reduces the frequency of certain behaviors than to eliminate them.

In this study, out of the male-specific diseases, the owners reported, for the non-sterilized dogs, enlarged prostate, and cryptorchidism. Out of the 36 reported cases, 66.66% involved prostate and 33.34% the testicles. The prevalence of these diseases in all males was 6.76% (24/355) for the prostate diseases and 3.38% (12/355) for cryptorchidism. The most frequent prostate illnesses were found in purebred dogs, 58.33% (12/24) of all cases; and in the group they were reported in 10.29% (14/136) of the males in this group. Crossbred dogs accounted for only 12.5% (3/24) of total cases of prostate disease reported, and in the group of crossbred 2.22% (3/135) of the males in this group. Adopted community dogs represented 29.17% (7/24) of all prostate diseases reported and within this group to 7.37% (7/95) of the community males. Cryptorchidism was reported only by owners of purebred dogs or crossbred dogs, 75% (9/12) in purebred and 25% (3/12) in crossbred. The purebred in this group had a prevalence of 6.62% (9/136) and the crossbred 2.22 (3/135).

In the context where the risk of malignancy of cryptorchid testicles is increased, cryptorchid surgery is often recommended. Analyzing purebred males undergoing sterilization surgery, it is found that any male having a prostate disease and the dogs with cryptorchidism were sterilized. Consistent with the recommendations of the current veterinary medical practice is that benign hyperplasia of the prostate is a very common condition of elderly dogs, with a reported incidence of 50% for the age of 2.5 years and 75-80% for dogs older than 6 years (Zirkin and Strandberg, 1984; Lowseth *et al.*, 1990).

It was observed that the decision of obligatory castration crossbred and adopted community dogs had also other reasons than prostate diseases and

cryptorchidism. A rate of 81.25% (26/32) of crossbred males and 30% (3/10) of adopted community dogs underwent necessary sterilization for reasons other than prostate disease or cryptorchidism.

CONCLUSIONS

Comparatively with the purebred dogs (23.33%, 67/300), a higher proportion of crossbred (32%, 96/300) and adopted community dogs (45.66%, 137/300) in the neutered group has been observed. This can reflect the interest in reducing the community dogs in the population of pets.

Adopted community dogs were usually neutered under 24 months old (81.75% 112/137), while purebred dogs over 24 months (80.60%, 54/67). Castration was necessary to 42.33% (127/300) dogs (48.81% females and 51.18% males), of which: 37.00% (47/127) purebred, 41.73% (53/127) crossbred and 21.27% (27/127) adopted community dogs.

The prevalence of false lactation was 71.05% (81/114) in purebred, 58.26% (67/115) in crossbred and 19.05% (20/105) in adopted community females. The prevalence of pyometra was 21.05% (24/114) in purebred, 18.26% (21/115) in crossbred, and 16.19% (17/105) in adopted community females. The prevalence of prostate hyperplasia was 6.76% (24/355). The prevalence of cryptorchidism was 3.38% (12/355). Early sterilization of non-breeding dogs could be a good decision to reduce the unnecessary distress associated with reproductive pathology.

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