

# Study on aggression in dogs in a public shelter

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**Abstract:** Assessing the behavior of a dog in a shelter is extremely important because the type of behavior can tell us if the animal can be given up for adoption, to whom it can be given up for adoption, if it cannot be given up for adoption and in which direction improvements in behavior need to be made to get it safely given up for adoption. This study aimed to assess the behavior of dogs in a public dog shelter by how a dog behaves towards a person (examiner) in a sequence of situations and to determine the number of individuals who responded with aggression. The behavior test was developed by The Rottweiler Rescue Society (Ontario, Canada) and John Rogerson, Blue Cross, Britain. Following minor modifications, has been used to examine dogs in public shelters. The test contains two additional assessment items from the article "An Evaluation of a Behavior Assessment to Determine the Suitability of Shelter Dogs for Rehoming" [1]. A total of 187 adult dogs were examined, of which 24 were identified with aggressive behavior and the types of aggression identified were dominance, interspecific, or territorial aggression. No behavioral test can show specifically how a dog will behave in a new environment, but the information obtained from the examination can indicate extreme manifestations of canine behavior, such as dominance aggression, possessive aggression, territorial aggression, and separation anxiety.

**Keywords:** dogs; aggression; behavior

## 1. Introduction

Evaluating behavior in dogs is an important part of responsible pet ownership and training. It involves observing and analyzing a dog's actions and reactions to various stimuli to understand their behavior and determine any potential problems or areas for improvement [2, 3]. Many different methods and approaches can be used to evaluate behavior in dogs, including observation, assessment tools, and training techniques. Common behaviors that may be evaluated include aggression, separation anxiety, fearfulness, and general obedience [4, 5]. Understanding and addressing any problematic behaviors makes it possible to create a positive and harmonious relationship with your dog and ensure their well-being [5]. It is also important to consult with a qualified professional, such as a veterinarian or a certified dog trainer if you have any concerns about your dog's behavior [6,7]. Aggression in dogs is a complex behavior that can manifest in various forms, such as barking, growling, snapping, and biting. It is often a response to fear, anxiety, or perceived threats, and can be directed toward people, other animals, or objects [8, 9, 10]. Aggressive behavior in dogs can be a serious problem, as it can lead to injury or damage to property, and can also cause strain on the relationship between the dog and its owner [2]. Identifying the underlying cause of aggressive behavior and addressing it promptly is important, as it can escalate if left unchecked. This may involve seeking the help of a qualified professional, such as a veterinarian or a certified dog trainer, and implementing a behavior modification plan to modify the dog's aggressive behaviors [11]. It is also important to use positive reinforcement training techniques and avoid punishment or physical force, as these approaches can often make the problem worse.

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## 2. Materials and Methods

The biological material was represented by a number of 187 dogs from a public shelter in the municipality of Satu Mare aged between 1 and 14 years, of which 114 were females and 73 were males. Out of the total number of 114 females, 4 were unspayed and out of the 73 males, 7 individuals were not neutered. Of the 187 animals, 68 were large, 91 medium, and 28 small. Of the 68 large dogs, 36 were female and 32 were male; of the 91 medium-sized individuals, 58 were female and 33 were male; of the 28 small dogs, 20 were female and 8 male. Of the total 187 dogs, 6 were purebred and the remaining 181 were mixed. Depending on size, the dogs were housed in pens of 2, 3, 4, and 5 individuals and individual pens for females with puppies. The pens were made of metal wire and the soil was either cloddy earth or grass, sometimes with the presence of gravel. The shelters with the resting place were built of wood, one for each pen. The dogs were fed twice a day, in the morning and evening, with commercial dry food and cooked food served in communal trays in each pen. Other materials used: dry grain-type food, a rubber bone-type toy with a rope of approx. 10 cm at each end.

The behavior assessment test used consists of two parts, the first part of the test is for observation purposes, the examiner is separated from the tested dog by the fences of the pen in which it is sheltered. This part includes approaching the animal, first contact by placing the examiner's palm on the pen wall while speaking in a friendly tone to the animal, followed by casual then insistent eye contact. Maintaining eye contact, the examiner will observe the dog's reaction to a threatening situation, after which he will decide whether to continue with the second part of the test. The last subpoint of the first part is separated from the animal after playtime, which can be used to deduce whether the animal might suffer from separation anxiety after adoption.

Between the two parts of the test, the examiner will leave the dog for a few minutes so that he can be perceived as a neutral person again. If the dog has shown repeated aggression on two or more tests, the testing should be discontinued, or proceed with caution.

The second part of the test involves direct contact between the examiner and the animal. For this part we have added two additional test items from the article "An Evaluation of a Behavior Assessment to Determine the Suitability of Shelter Dogs for Rehoming" [1] these being the first sub-point which consists of performing 3 head-to-tail and 5 head strokes, assessing the dog's response during the stimuli, during the pause between stimuli and after the end of stimuli and the last subpoint of the test, which involves assessing the response to noise and movement. These two subpoints replaced the predator testing and intraspecific aggression testing in the original test, which could not be performed in the shelter. The second part of the test also includes a simulated routine physical examination by the veterinarian, two obedience tests, the dog's reaction to handling the collar, and two assessments of resource guarding, namely food and a toy.

## 3. Results and Discussion

Out of a total of 187 dogs examined, 20 individuals were discontinued for safety reasons. In the second part of the test, sub-point 7, which tests resource guarding (the dog will be offered a toy which will then be removed), no dog showed interest in the toy offered.

In the first part of the test, in the first subpoint consisting of approaching the animal, 7 dogs, of which 4 females and 3 males, 4 large and 3 small, showed an aggressive reaction, manifested by growling, showing fangs, and offensive posture. Of these, 3 females and 2 males, 4 large and 1 medium-sized, were known to exhibit aggressive behavior at the shelter. Of the five dogs, one female and one male were not neutered. These 5 dogs fall into the category of intra- and interspecific aggression, dominance aggression, or perhaps territorial aggression. Of the 7 dogs we did not continue examining, we observed one female dog with 10-day-old puppies. The medium-sized female Metis, about 2 years old, showed aggression towards the examiner, with growling and intent to bite. This behavior is normal and is related to the post-parturition hormonal status and the presence of pups. The last dog with an aggressive reaction to this sub-point was a medium-sized Metis male, about 5 years old, which showed aggression towards humans. For the following sub-point of the first part of the test, i.e. First Contact, Touch I, Touch II, Occasional Eye Contact, and Insistent Eye Contact, in addition to the 7 where we did not continue the second part of the behavioral test, in the sub-point Touch II a small female showed aggressive reaction by growling and leaving the examination

environment. On casual eye contact, 20 dogs, 13 females and 7 males, 7 large, 7 medium, and 6 small dogs showed a fear reaction; fear is a major factor that can trigger aggressive behavior. When confronted with insistent eye contact, 33 dogs reacted defensively (moved away from the examiner). In the next sub-point, threat, where the examiner strikes the pen wall while adopting an offensive posture and maintaining insistent eye contact with the animal, 13 dogs reacted aggressively, including the 7 that did not continue with the second part of the test. Of the 13 dogs, 9 were female and 4 male, 6 large and 7 medium-sized. On the same sub-point of the test, 66 dogs, 45 females, and 21 males, 21 large, 28 medium, and 17 small showed a defensive attitude (moving away from the examiner).

These two reactions represent responses to a potentially dangerous stimulus that may show resource defense behavior (in this case bodily integrity), which up to a certain limit is a normal reaction on the part of the animal (normally a dog that feels threatened only attacks when it has no alternative escape from the dangerous situation and only enough to allow it to escape).

In the last sub-point of the first part of the test, 92 individuals fell into the "bark/yapping/jump on the fence" reaction, of which 47 were females and 45 males, 35 were large, 48 were medium and 9 were small. These dogs may have separation anxiety after adoption.

In the second part of the test, in the first sub-point consisting of three head-to-tail and five head strokes, 10 individuals exhibited an aggressive reaction by attempting to avoid contact with the examiner, growling, and displaying the intention to bite. Of the 10 dogs, 9 were female and 1 male, 3 large, 5 medium, and 2 small. On this sub-item, in 9 of the dogs we did not continue the examination for safety reasons (6 females and 3 males, 5 large and 4 medium). 13 dogs, of which 8 females and 5 males, 3 large, 4 medium and 6 small showed fear reaction, immobility or leaving the environment. We proceeded with caution when examining them because fear is a major factor that can trigger aggressive behavior. In the physical examination, 12 individuals we did not continue the examination: 9 females and 3 males, 6 large, 5 medium, and 1 small, including the 9 individuals we did not continue the testing in the previous subpoint. 19 dogs had a bad reaction to the physical examination, characterized by avoiding contact with the examiner or leaving the examination environment. None of the 19 dogs externalized an intention to bite.

In sub-point submission I, in 18 dogs we did not continue the test 14 females, and 4 males; 9 large, 8 medium, and 1 small. Only one dog, a medium-sized male, showed an aggressive reaction, manifested by growling and the intention to bite. A total of 22 individuals, of which 16 were females and 6 males, 8 large, 5 medium, and 9 small, reacted defensively by leaving the examination environment and avoiding contact with the examiner.

In the next sub-point, Submission II, in 19 dogs we did not continue the examinations for safety reasons 14 females, 5 males; 9 large, 9 medium, and 1 small. Only one large male dog showed an aggressive reaction, growling and baring its teeth. A total of 25 individuals did not allow themselves to be positioned but did not show aggression. A total of 14 dogs, 9 females and 5 males, 5 large, 3 medium, and 6 small, showed fear/avoidance reactions. Fear is a major factor that can trigger aggressive behavior.

In the sub-item "Handling of slag", 19 dogs were not examined further. 12 individuals externalized aggressive behavior, 8 females and 4 males; 6 large, 3 medium, and 3 small, by avoiding contact with the examiner, growling and having the intent to bite. In the sub-item "Handling of slag", 19 dogs were not examined further. 12 individuals externalized aggressive behavior, 8 females and 4 males; 6 large, 3 medium, and 3 small, by avoiding contact with the examiner, growling and having the intent to bite. Of the dogs examined, 29 animals, 18 females, 11 males, 2 large, 11 medium, and 6 small, refused to be led but did not exhibit aggressive behavior. These dogs are dominant, upon a forceful intention of handling from the examiner they might show aggression.

When guarding resources, a total of 24 individuals, including 14 females and 10 males, 6 large, 14 medium, and 4 small, reacted aggressively by threatening, growling, and displaying the intention to bite. These dogs exhibit possessive/defensive resource aggression. On a total of 20 individuals, we did not perform this test for safety reasons.

No individual showed aggressive behavior on the last subitem of the test, reaction to noise and movement. Instead, 18 dogs, 11 females and 7 males, 6 large and 3 small, showed fear, immobility, or leaving the examination environment.

#### 4. Conclusions and Recommendations:

Of the 187 dogs examined, in a total of 27 individuals we discontinued further behavioral testing for safety reasons. These dogs showed either dominant aggression, interspecific aggression, or territorial aggression.

Age was not a major factor influencing aggressive reactions from dogs, with the majority of dogs falling into the 5-8 and 9-14 age categories.

Of the dogs that showed aggression, the majority were large and medium-sized, with smaller individuals most often showing fear.

The sex of the animal did not play a significant role in the manifestation of aggressive behavior; of those that expressed aggression, the number of females was approximately as high as the number of males.

The types of aggression encountered in the two shelters were: dominance aggression, possessive/resource defense aggression, territorial aggression, interspecific aggression, and maternal aggression.

Of the categories of aggression observed in the tests, the most common were possessive/defensive aggression for resources (represented by food) and dominance aggression.

By housing dogs according to size, temperament, and age, we have not encountered cases of intra-specific aggression;

We did not observe fear-induced aggression because dogs that exhibited fear or defensive behavior were able to move away from the examiner and did not have to attack;

For the behavioral health of the dogs but also to increase the chances of adoption of the shelter dog, it is recommended to engage in socialization with the animals through play programs and other activities with the dogs at least once a week.

The test used is a quality tool for assessing aggression in dogs.

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