

Aggression Effects - From a Human Perspective + Solutions

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Background

Aggression effects by dogs to humans is a gentle way of describing intentional attacks by dogs mostly by biting and in this paper resulting in hospital based treatment.

The Injury Surveillance and Control Unit of the South Australian Department of Human Services have been monitoring this serious situation since 1991. It is one of the more frequent causes of presentation to the emergency department of hospitals as a result of trauma. Injury records from the Women's and Children's Hospital in South Australia show that dog attacks are the fourth most common reason for children taken to hospital as a result of injury, after playground equipment, bicycles and motor vehicles.¹

Past Studies.

In 1991 the Surveillance Unit published the results of its first large sample analysis of its hospital collected emergency presentation data.² Each case within the data set was carefully examined and reconstructed. Events that did not represent an authentic attack were deleted. The research determined that there could be up to 300,000 persons injured annually in Australia and that a hand full of specific breeds totalling only around 30% of the dog population were causing around 70% of all hospital treated human victims.

In 1997 the Surveillance Unit published again, this time in the Medical Journal of Australia.³ It determined that about 6,500 people are injured in Adelaide each year as a result of a dog attack with around 800 seeking hospital treatment which corresponds to approximately 13,000 nationally. It showed that the rate of attack for the very young and the very old was twice the middle years. The severity of the injuries for these age categories as indicated by the rates of admission was five to seven times greater as well. Again it was shown that the same five breeds of dog were responsible for 73% of attacks and represented only 31% of the dog population. Several control measures were indicated by the analysis, these included controls on the more hazardous breeds, a leash at all times in public, postponing the ownership of dogs in the home environment until children are older and a concept of a "user pays" liability insurance system.

In May of 2002 the Surveillance Unit again examined their dog attack data to see if there had been any progress in the reduction of attacks. Since the first publishing in 1991 there had been much talk nationally about what action was necessary and what would be acceptable to the community by way of enforceable controls. However in practical terms apart from some local governments taking the initiative by restricting dogs without leashes little had changed. The results of their next analysis of the data confirmed that nothing had changed with the dog attack toll as well.

The 2000, 2001 and part 2002 Study (to the end of April 2002).

All cases presenting to the Women's and Children's Hospital and the Queen Elizabeth Hospital's (there are several other metropolitan hospitals) emergency departments for the period above were examined and events other than genuine attacks were discarded. There were 290 cases in the data set. This corresponded to around the same rate of presentation as before i.e. 800 persons per year. That is to say there had been no reduction in dog attacks causing injury to humans in the ten years since the issue was first comprehensively

examined. The 800 includes 250 children 12 years of age or less of whom 60 will be admitted for long term treatment mostly because of severe head and facial injuries.

There had been some changes to the list of dogs causing the greater part of the public health toll. 128 of the 290 dogs that attacked had been identified by the victim or their family, of these 107 i.e. 84% were personally known thus the breed identification can be considered to be acceptably accurate. There is no evidence to suggest that the distribution of dogs not named by breed in this sample is different from the named. From this the dogs most associated with attacks can be identified. These were combined with their proportion of the dog population by their breed (obtained from local governments). This enables a ranking of those dog breeds causing the most public health concerns to be determined. The following list is in order of decreasing severity ranking:

1. **Rottweiler.** 20.3 % of all attacks and 5.7 % of total dog population.
2. **Jack Russell Terrier.** 10.9 % and 4.7 %.
3. **German shepherd.** 15.6 % and 8.1 %.
4. **Bull Terrier (all types).** 8.6 % and 7.9 %
5. **Kelpie.** 5.5% and 6.0%
6. **Doberman.** 1.5 % and 1.2%
7. **Healer. (red/blue Aust. Cattle dog)** 3.9 % and 6.3 %

This ranking list of 2002 clearly shows that in metropolitan South Australia the first four breeds representing just 26.4 % of the dog population were causing 55 % of the problem.

In earlier analysis the Rottweiler ranked around fifth, its rise to the top is concerning. The German shepherd has eased from a previous high of 25.3 % down to 15.6 % however their ownership had reduced from 10.2 % to 8.1 %, thus explaining some of the reduction. The Jack Russell was a newcomer to the list. Its appearance was disturbing as it is a small dog which gives the impression that they are safe and suitable for children. This study suggested the opposite; of the 14 attacks attributed to them in this analysis ten were children all of whom sustained serious injuries to their face.

The part 2002, 2003 and part 2004 Study (to the end April 2004).

The remainder of the cases from 2002, all for 2003 and up to the end of April 2004 from the same hospitals above were obtained for the most recent examination. The hypothesis was "in view of the recent publicity and calls for improved dog management would there be a measurable reduction in attacks this time?"

The data were examined and all non-attack cases were deleted. There were 303 remaining for the period. In the previous study the 290 cases were collected over 28 months which represents 10.357 per month. The 303 were collected over 24 months which represents 12.625 per month. Thus the hypothesis was not supported; instead it would seem that there has been a more than 20 % increase in the past two years. This may not be as concerning as it would first appear, perhaps the increased publicity has prompted more reporting? However it is unlikely to be as much as 20 %.

122 of those injured were able to identify the breed of the dog as for previous studies and 108 of those personally knew the attacking dog. In the same manner as before a

severity ranking list of those dogs causing the most public health concern was compiled viz.

1. **Rottweiler** 12.3 % of attacks and 5.7 % of total dog population
2. **Jack Russell Terrier** 6.5 % and 4.7 %
3. **Kelpie** 8.2 % and 6.0 %
4. **Bull Terrier (all types)** 9.8 % and 7.9 %
5. **German shepherd** 8.2 % and 8.1 %
6. **Heeler (red/blue Aust. Cattle dog)** 6.5 % and 6.3 %
7. **Doberman** 1.0 % and 1.2 %

There has been some movement within the list. Never the less the first six breeds still account for 51.5 % of the problem whilst accounting for only 38.7 % of the dog population. This outcome has now been replicated four times using different data sets over more than a decade.

Clearly all dogs are not created equal. Some have a higher tendency to attack and the potential to cause more serious injury when they do. These findings continue to be unpopular with the dog lobby, so much so that many seem to ignore them in hope that they will go away. Policy and decision makers have also shown a mutual reluctance to utilise them as potentially the most effective intervention available to reduce the dog attack epidemic. At the very least advisory information should be distributed to the parents and carers of those most at risk (children) that certain popular dogs are significantly more hazardous than others.

Other Findings from the Studies.

Where did the attacks happen? From the combined sample of 593 from the last two studies, 86 occurred at a not specified location, 412 were documented as either occurring at home or at a friend or neighbour's home, that is 81% in the domestic environment. The remaining 95 (19%) occurred on the street, in a park, at the beach etc. Earlier analysis has also shown this 20% occurrence in the street and parks to be consistent. The decision by the S.A. Government to require leashing for this 20% will be an effective intervention. Past studies have shown that this will reduce attacks in this location by 50%.⁴

Risk factors.

- In the part 2002, 2003 and part 2004 study 31.5% of the victims were 5 years of age or less, 15.8% were 2 years of age or less.
- An eating dog is said to be more likely to attack. In the 593 attacks documented in the two most recent studies food was only noted 34 times. Eating may have been involved more often, but it was not recorded.
- A dog with pups is considered to be more aggressive, however in the combined data of 593 cases pups were only mentioned a couple of times. There may have been more, but again they have not been recorded.
- Fighting dogs. 17 cases out of the combined total of 593 were reported to have occurred when separating fighting dogs.
- Fear factor surprise. A dog that is woken suddenly, or is tripped over, or fallen on, or is approached to quickly, or handled inappropriately, or even patted incorrectly can understandably react in an aggressive manner. These 593 cases included 50 events that fitted this category. There was likely to have been many more, especially with young children when the actual event may not have been observed.
- Playing with the dog. 116 of the 593 cases reported that the victim had been playing with the dog at the time of

the incident. Playing seems to be a perfectly reasonable activity, but most of the victims were young children and it is likely that their handling of the dog was in the fear factor category as described above. It is primarily for this reason that the Delta Dog Program has been introduced into South Australia to educate children at early primary school age to instinctively behave appropriately around known and unknown dogs.

- A study by the Division of Field Epidemiology, Centres for Disease Control and Prevention, Atlanta, USA. Showed that male dogs (all breeds inclusive) are 6.2 times more likely than female dogs to cause injury.⁵

Discussion

These analyses provide some very useful insights into understanding the aetiology of dog attacks. They show that more than two-thirds of hospital treated dog attacks occur at home and in more than two-thirds of these events the attacking dog is known to the victim.

There have been a variety of theories put forward to explain this elevated level of attack in the domestic environment, some have been examined above. However the bulk of attacks can be categorised as simply the result of the normal interaction between dogs and humans in the domestic environment where children are especially vulnerable.

Education is the most popular "fix all" remedy promulgated to solve the situation, however the most frequent and severely injured are the very young who cannot be expected to understand the consequences and meaning of provocation, rough play, teasing etc.

Effective education must be directed at parents and care-givers and it is more than just supervision. Instead it needs to be a multi factor intervention promoting behavioural change in the community to adopt new practices such as postponing dog ownership until children are older, selecting less hazardous breeds, isolation fencing, neutering of male dogs, and so on. The Delta Dog Program is designed to begin to educate the behaviour of children around dogs once they reach school age. Very young children are entirely dependant on their parents and care-givers to provide a safe environment free from the risk of dog attack.

Expectations of effective behavioural change in an acceptable time frame are historically slow. The sooner recommendations as above are openly, vigorously, and unitedly promoted by organisations such as ours the better. When such young children are so vulnerable there can be no excuse for continuing procrastination.

References.

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