
REPORTED DOG BITES: ARE OWNED AND STRAY DOGS DIFFERENT?

John C. Wright

Abstract. *Bite reports for 1985 from the city of Dallas, Texas, were analyzed for different aspects of the dog-bite event, including characteristics of the dogs, victims, wounds, and attack settings. Most commonly, bites were inflicted by owned, male dogs that bit victims who were male, 20 years of age or younger, and acquainted with but not living in the same household as the dog. Attacks frequently occurred in the late spring to early summer and in the late afternoon. These characteristics are similar to typical bite events in large urban settings reported by others (e.g., Beck and Jones 1985; Beck, Loring, and Lockwood 1975). Further analysis of 1,724 bite reports showed that owned dogs were more dangerous than strays: compared to strays, owned dogs delivered significantly more bites, were larger, bit more victims on the head or neck, and delivered more bites resulting in wounds needing treatment, often at an emergency room. That victims are more likely to report only severe bites from owned dogs is proposed as a parsimonious but as yet unsubstantiated explanation for these differences.*

Psychology Department, Mercer University, Macon, GA 31207.

Portions of this paper were presented at the Southeastern Psychological Association meeting, Washington, D.C., March 1989. This study was supported, in part, by a grant from Mercer University.

Brenda J. May, Director of Animal Control, Division of Environmental Health, Department of Health and Human Services, City of Dallas, Texas, provided access to the animal bite reports. Carmella Prescott, Research Assistant, Psychology Department, Mercer University, made critical suggestions on an earlier draft.

INTRODUCTION

The number of dog bites reported to health departments is at an all time high (Forbes, Van Etten, and Anderson 1987). Factors associated with bite likelihood include characteristics of both the dogs and their victims. Moss and Wright (1987) have shown that people misjudge the communicative signals that are predictive of dog bites, thus increasing bite likelihood. Greater risk for dog bites has been reported for people whose occupations bring them into frequent contact with dogs (Lockwood and Beck 1975; Mann et al. 1984; Moss and Wright 1987) and for those whose apparent preference for dogs (based on dog ownership) makes them more likely to approach and interact with any dog, owned or stray (Beck and Jones 1985; Lockwood and Beck 1975; Moss and Wright 1987). Bites by stray dogs typically constitute 10% to 20% of reported dog bites (see, e.g., Beck and Jones 1985; Greene and Lockwood 1990; Kizer 1979; Marcy 1982; Wright 1985). However, the bite-event characteristics of stray, unowned dogs have not been reported separately from those of owned dogs. Although stray dogs are responsible for a relatively small number of bites, they are perceived as being more likely to bite and as posing a relatively greater health risk to people (Beck and Jones 1985; Moss and Wright 1987). The purpose of the present study was to describe the dog, victim, wound, and setting variables that characterize bites from stray and owned dogs from the same population.

METHOD

Procedure

Data were extracted and numerically coded from 1,754 dog-bite reports completed by Dallas, Texas, animal control officers (ACOs) for 1985. For purposes of clarity, only items with mutually exclusive and exhaustive categories were used in the analyses (see Table 1). I classified the items further within three categories representing different aspects of a bite event: characteristics of the dogs (relationship, sex, and size), characteristics of victims and wounds (age, gender, bite location, treatment, treatment type, and wound type), and at-

Table 1. Items Coded for Analysis

Dog's relationship:	Owned or stray. (Stray dogs included those for whom no owner could be found. Thus, stray dogs were distinct from owned dogs that were "straying" or "roaming.")
Dog's size:	Small, medium or large. (The bite report form included a category for size in pounds, yet ACOs described dogs as relatively "small," "medium," or "large.")
Dog's sex:	Male or female. (Categories for neuter/spay were included on the bite form but were left blank in 77% of all cases; thus, reproductive status was deleted from the analysis.)
Victim's age:	1 to 80 years. (Age was rounded to the nearest year for coding and grouped in five-year blocks for analysis.)
Victim's gender:	Male or female.
Bite location:	Foot or leg, finger or hand, arm, or neck or face.
Treatment:	Yes or no. (Did victim receive treatment for bite?)
Treatment type:	Emergency room, physician, or first aid. (Treatment at an ER was classified as such regardless of the administration victims received; "first aid" indicates treatment at home.)
Wound type:	Scratch, tear, or puncture. (Most wounds were classified within these categories. A few reports stating the victim's skin had been broken were classified as "scratches".)
Time of bite:	1 to 24 hours.
Date of bite:	January to December. (By month for 1985.)

tack settings (time, and date of bite). Statistics describing bites within each category and bites by stray versus owned dogs were done using SPSSx.

RESULTS

Total Dog Bites

The 1,754 dog bites represented 70.3% of all animal bites reported for 1985¹; of these, 1,724 cases involving dogs that were classified on the bite reports as either owned or stray were used for further analysis. Although owned dogs were responsible for 88% of Dallas's reported dog bites, only 17% of these cases involved victims bitten by their own (or their families') pets; male dogs were responsible for 70.5% of all bites; boys and men received 61.4% of all bites; people 20 years or younger were victims in 52% of bites (this age group made up 35% of the Dallas population); and a higher percentage of victims were attacked from 5 to 8 P. M. (27% of all bites), and in March, April, and May (35% of all bites) than at other times of the day or year (see Table 2).

Stray and Owned Dogs

Bites by stray and owned dogs differed with respect to the dog by size (chi-square [2, $N = 1613$] = 8.43; $p = .015$; see Figure 1, p. 116) but not

by sex ($p > .05$; see Figure 2, p. 117); and with respect to the victim by bite location (chi-square [3, $N = 1561$] = 34.45; $p < .0001$; see Figure 3, p. 117), treatment (chi-square [1, $N = 1443$] = 23.98; $p < .0001$; see Figure 4, p. 118), and treatment type (chi-square [2, $N = 1082$] = 34.18; $p < .0001$; see Figure 5, p. 118) but not by victim age, gender ($p > .05$; see Figure 6, p. 119), or wound type ($p > .05$; see Figure 7, p. 119); but did not differ with respect to the attack setting, by time, or by date of bite ($p > .05$).

DISCUSSION

The dog-bite statistics for Dallas, Texas, are similar to those summarized for relatively large samples by others (e.g., August 1988; Beck, Loring, and Lockwood 1975; Gagnon 1989; Greene and Lockwood 1990; Kizer 1979, Marcy 1982; Wright 1985). In those studies and in the present one, the majority of bites were delivered by male dogs to victims 20 years of age or younger who were to some extent familiar with the dog (this comparison does not apply for strays), with boys and men bitten approximately twice as often as girls and women; bites were delivered in the late afternoon, and in the spring and summer months.

Because people believe unowned dogs pose a greater zoonotic risk (see Beck and Jones 1985),

Table 2. Date and Time of Bite

Date		Time	
Month	%	Hour ⁱ	%
January	7.6	0700	2.2
February	8.9	0800	3.7
March	11.3	0900	3.6
April	11.7	1000	6.0
May	11.6	1100	6.2
June	9.6	1200	6.9
July	9.2	1300	6.1
August	9.7	1400	6.7
September	8.6	1500	7.3
October	4.5	1600	7.4
November	3.6	1700	9.5
December	3.7	1800	9.1
Total	100.0	1900	8.7
		2000	7.1
		2100	2.4
		Total	92.9

a. Hours in which less than 2% of bites were delivered (2200 through 0600 hours) were excluded, resulting in a total of less than 100%.

they are often regarded as more dangerous than pets. But the present results indicate that it is pets, not strays, that are a greater health risk to bite victims. In particular, compared to strays, owned dogs were larger, and delivered a higher percentage of bites to the face or neck, their victims were more likely to seek some form of treatment for their wounds, and a higher percentage of wounds were treated at hospital emergency rooms.

Why ownership should be a discriminating variable in the dog-bite event is a matter for speculation; one hypothesis involves the reporting of bites from owned and stray dogs. Bites of any kind from strays are likely to be reported (Beck and Jones 1985), but initial and less severe bites by pets are not (Borchelt 1983; Wright and Nesselrote 1987). Consequently, the present results may reflect a reporting bias rather than any real difference in bites from stray and owned dogs.

Beck and Jones (1985), for example, found only a small percentage of bites were actually reported to health departments in a large Pennsylvania county. In their study, 3,200 children were asked if they had been bitten by an aggressive dog during 1980. The number of bites actually delivered to children was more than 36 times the number reported to the county. Although not directly comparable to the present study (data sets were constructed from recall data, not from bite re-

ports), the Beck and Jones results provide evidence that distributions constructed only from reported dog bites are susceptible to sampling bias.

Victims' willingness to report a bite may, in turn, depend on any of a number of mediating factors to do with victims' perception of the socially appropriate thing to do. A person's willingness to report may be negatively influenced by social pressures such as fear of reprisal or loss of cordial relations with a neighbor, especially if reporting a bite from a neighbor's dog; potential embarrassment from publicly admitting to have been bitten by one's own dog; or potential embarrassment from reporting a bite from a small or otherwise apparently harmless dog.

Conversely, a victim may be more willing to report a bite when it is socially appropriate to acknowledge the event, for example, when a bite occurs from a relatively large dog (owned or unowned), is severe enough that it is obvious that action should be taken (i.e., subjective assessment of risk; see Beck and Jones 1985), or is delivered by an unowned dog, regardless of size (i.e., because of the greater perceived health risk from stray dogs).

Thus, the relatively more dangerous nature of owned dogs may be parsimoniously explained by differences in victims' willingness to report. Bites that are likely to be formally reported include those that distinguish pets from strays in the present study, that is, bites delivered to the head or neck by larger dogs, that result in wounds requiring treatment, especially at an emergency room. Rather than measuring actual differences in the bite-event characteristics of owned and unowned dogs, the present results may instead reflect the conditions that prompt their reporting.

CONCLUSION

In this study, further evidence was presented that patterns exist in typical dog bite events for victims living in large, urban settings. The bite-report items that differentiate between bites from stray and owned dogs reveal owned dogs to be more dangerous. The possibility that these differences stem from victims' willingness to report all bites from unowned dogs but not from owned dogs awaits further study. Rather than offering a definitive explanation of why bites from pets constitute a greater health risk to people, the present study provides a

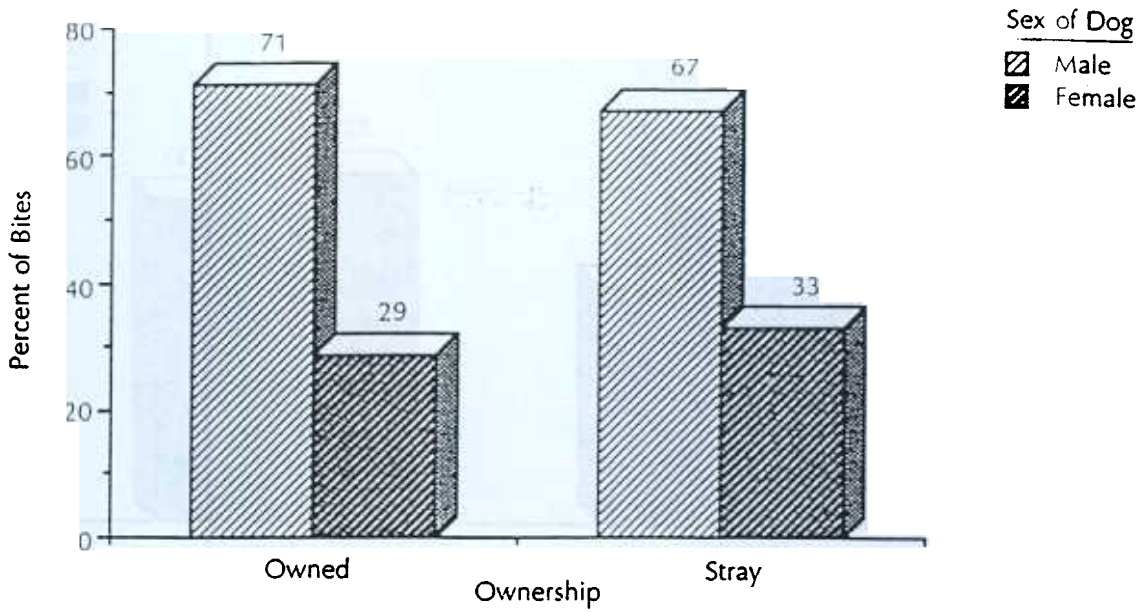


Figure 2. Dog Characteristics. The percentage of bites did not differ as a function of ownership and the dog's sex. Overall, approximately 7 of 10 bites were by male dogs.

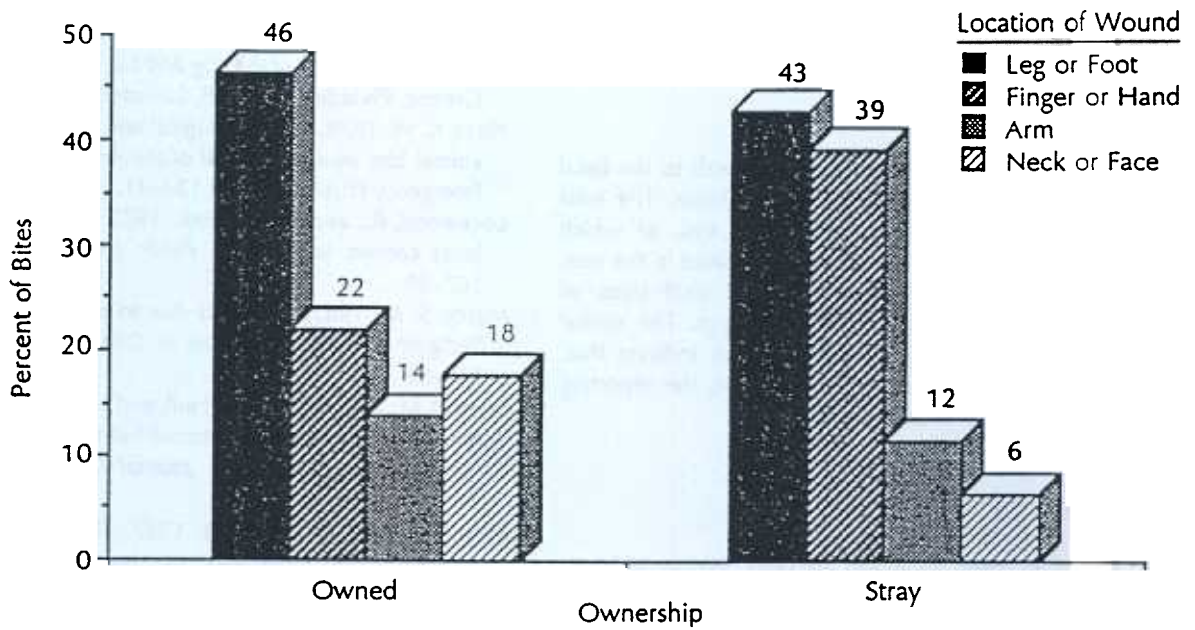


Figure 3. Victim/Wound Characteristics. The percentage of bites differed by ownership and body location. Bites were frequently on the lower extremities regardless of ownership, but victims of owned dogs received a higher percentage of facial bites.

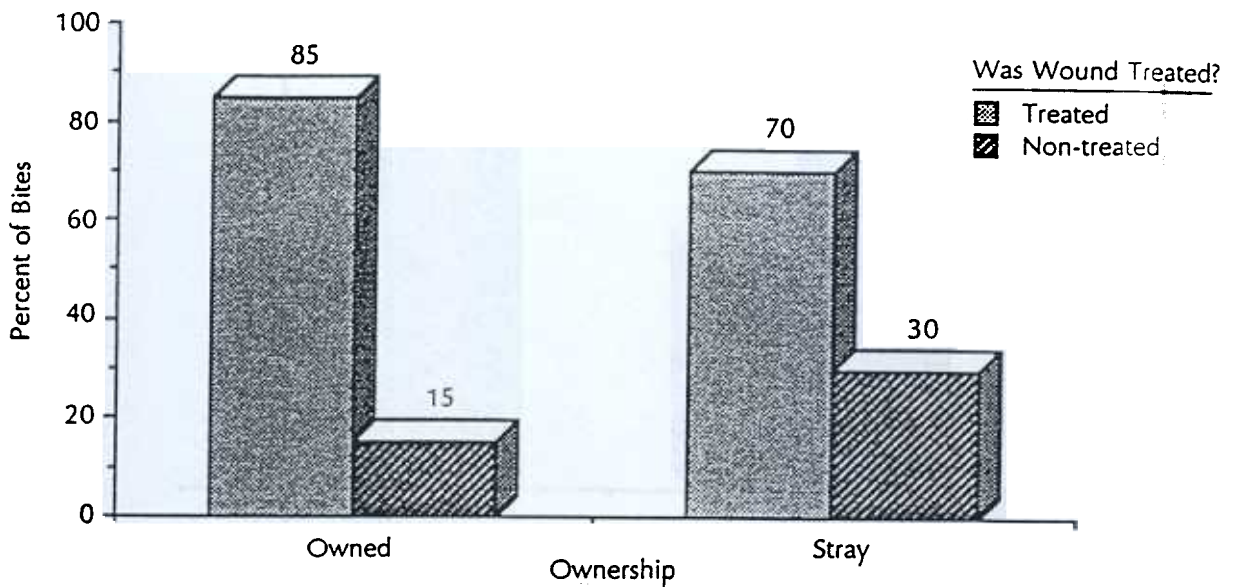


Figure 4. Victim/Wound Characteristics. The percentage of bites differed as a function of ownership and if victims sought some form of treatment for their wounds. More victims of owned dogs had their wounds treated than did victims of stray dogs.

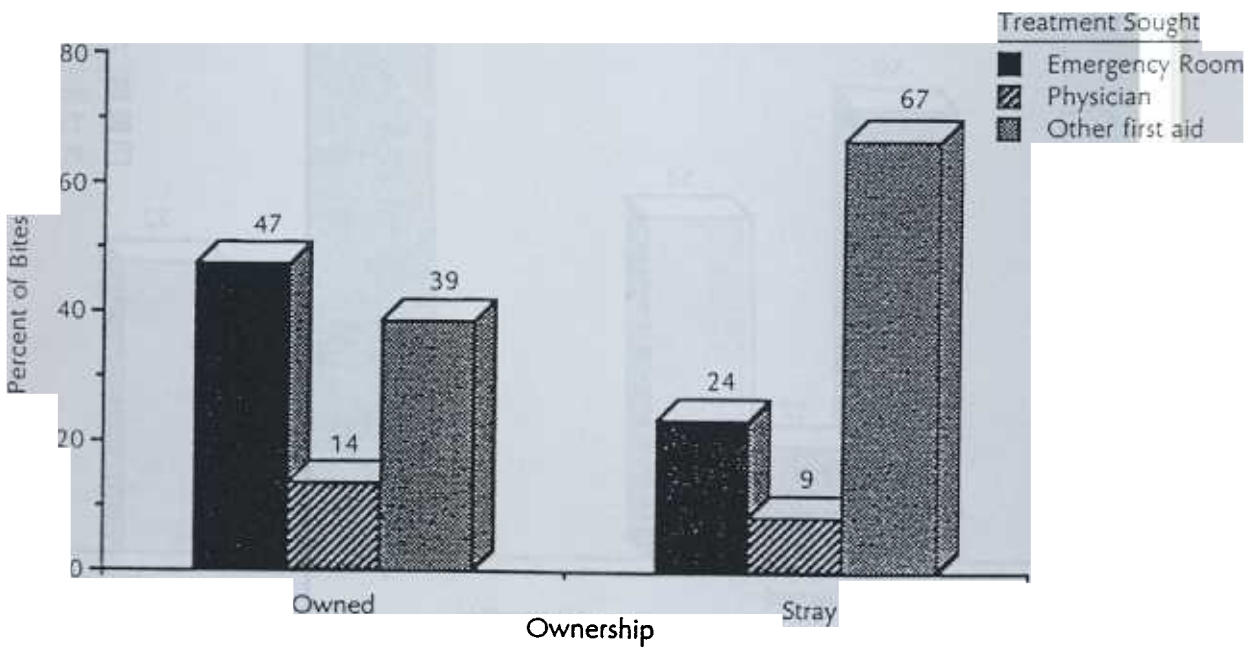


Figure 5. Victim/Wound Characteristics. The percentage of bites differed as a function of ownership and type of treatment. Most victims of owned dogs sought treatment from an ER and those bitten by strays administered treatment at home.

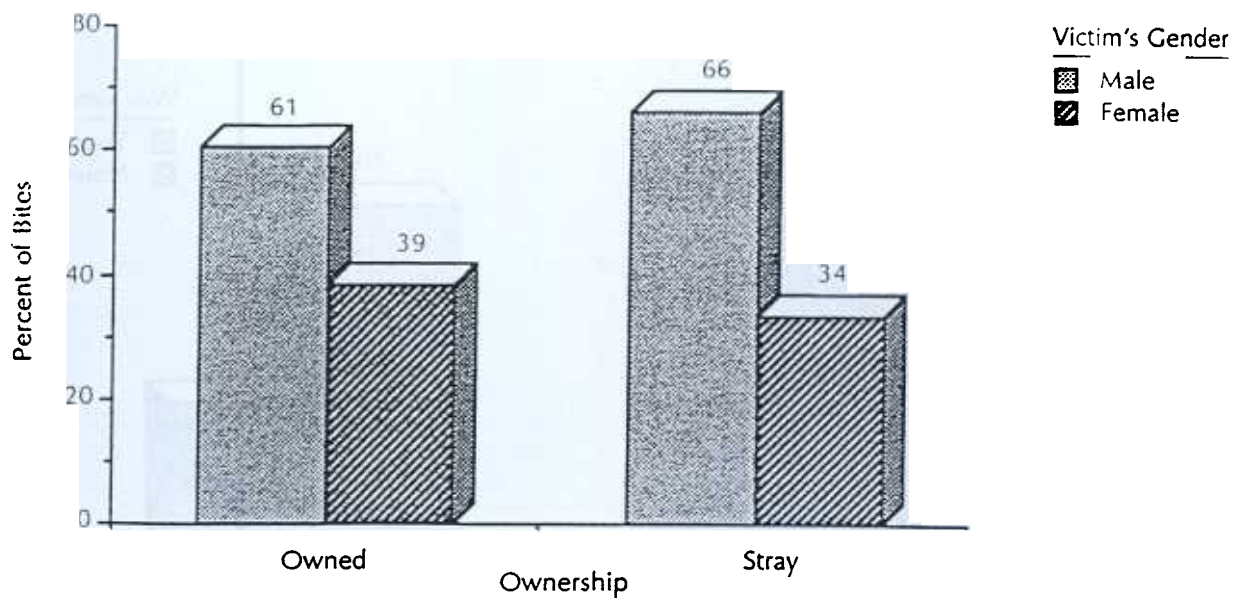


Figure 6. Victim/Wound Characteristics. Bites were not differentially affected by ownership and the victim's gender. Overall, approximately 6 of 10 victims were males.

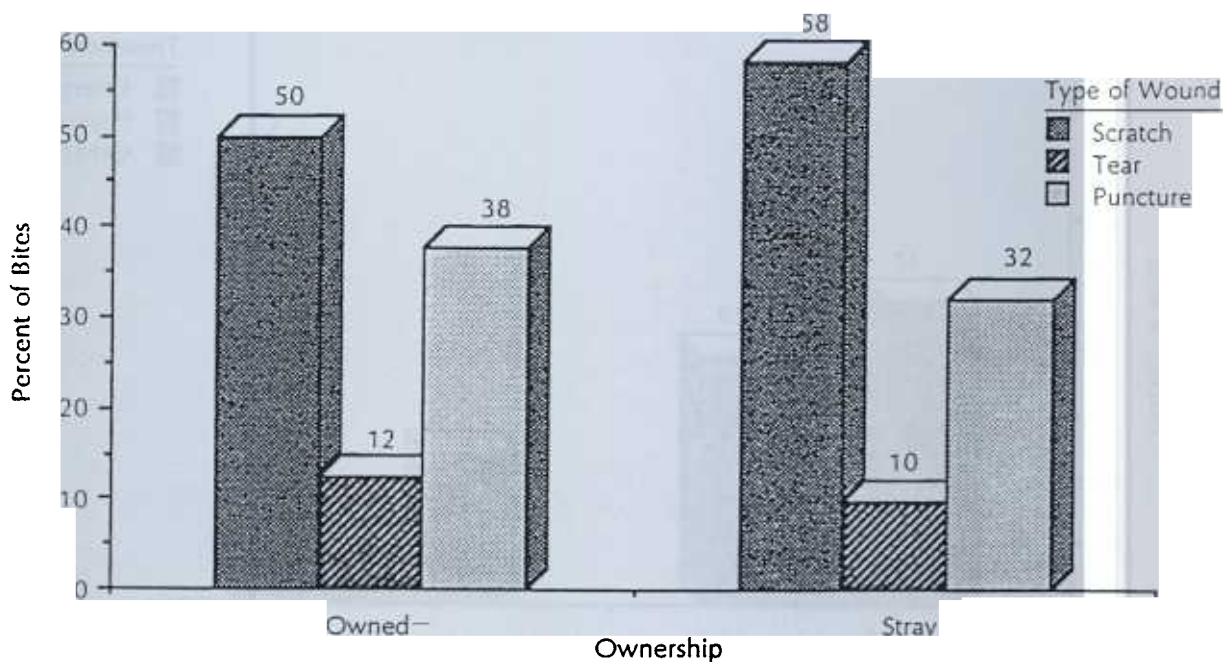


Figure 7. Victim/Wound Characteristics. Although more victims of owned dogs sought treatment for their wounds (Figure 4), the types of wounds did not differ between victims of owned and stray dogs.