

The Five-Points Body Condition Scoring for Assessing Physical Status of Hunting Dogs in Maiduguri, Nigeria

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Abstract: The study is aimed at documenting the physical assessment of hunting dogs using five points body condition scoring in Maiduguri, Nigeria. Twenty dogs comprising of 13 males and 7 females were used for this study. Their history and brief clinical examination were investigated and were found to be apparently healthy. All the dogs examined in this study falls under three scales of the five points body condition scoring (BCS); those categorized as thin (scale 2) were 6 (30%) and their ribs, lumbar vertebrae and pelvic bones were visible, no palpable fat with minimal loss of muscle mass. Those categorized as moderate (scale 3): Their ribs were easily palpable, with minimal fat covering, abdominal tuck were evident when viewed from above and they were 11(55%). Those categorized as overweight (scale 4): Their ribs were palpable but with difficulty, noticeable fat deposits over lumbar area and base of tail and abdominal tuck were absent; they were 3 (15%). In all the dogs examined there was neither too thin (scale 1) nor obese (scale 5). The study shows that despite the fact that dogs in the study area are sometimes considered as unclean and can be handled with less care; but the hunters in Maiduguri have high regard for their dogs as 11 out of 20 (55%) were scored moderate under BCS.

Keywords: Body condition score, hunting dogs, Maiduguri, Nigeria.

I. INTRODUCTION

The *Canis familiaris* belongs to the family Canidae and order carnivora. They possess an assemblage of intelligent, flesh eating mammals with prominent canine teeth. Their molars are adapted for crushing and cutting. Members of this order have toes provided with claws and limbs that are adapted for endurance running; their behavioral characteristic identifies them as predators. They have strong family ties devoted to the care for their young (AKC, 1975).

Generally in north eastern Nigeria, dogs are kept for hunting and guarding purposes but not eaten. Sometimes dogs are not kept by herders, but some of the pastoral peoples further south use them to guard their livestock. The dogs are fed with milk to encourage them to stay in place while the owner is away. In many Kanuri villages, dogs are regarded as unclean and, sometimes, as contrary to Islam (Roger, 1995). Nonetheless, populations of semi-feral and often diseased dogs live on the margins of villages in most regions. The Warji and Tangale people from Bauchi and Gombe States travel throughout Borno in the dry season, buying old dogs and catching feral dogs, a practice which is regarded as something of a public service as dogs often trouble livestock. They then herd the dogs back to the major dog markets, where they are sold on to entrepreneurs who deal with traders from further south, eventually reaching down to Calabar (Roger and Blench, 1995). Generally, five-point body condition scoring (BCS) is widely used by veterinarians and clinicians to assess adiposity in dogs (Bray, 1993 and Ishida, 2007); but our literature search revealed that this method of physical assessment in dogs have not been reported in the study area; hence this study.

II. MATERIALS AND METHODS

Study area:



Figure 1: Map of Nigeria showing study area, Maiduguri (www.nigerianeye.com).

The study was conducted in Maiduguri, Nigeria. Maiduguri is located between latitude 11° and 50° north and longitude 13° and 36° east. The annual rainfall average 320mm, rainy season begins in June and last till October and dry season begins in November and last till May. The rainfall is monsoonal, generally been heaviest in August. The annual temperature average 35.4°C, the climate of Maiduguri can be divided into six zones: Guinea zone, sunadoi-Guinea zone, sunado-sahelian zone, sahelo-sudanian, sudano-saharan zone and Saharan zone (Mayomi and Muhammed, 2014). Twenty dogs were used for this study. The medical histories of all the dogs were investigated as well as brief clinical examinations were carried out in order to confirm their health status. All the dogs were found to be apparently healthy. The consent of the dog owners (hunters) were obtained after a detailed explanation of the purpose, nature, and potential risks and benefits of the study. All the dogs with the assistance of the owners were allowed to stand, looking forward with their head in a normal carriage position. Individually the dogs were assigned a body condition scoring (BCS) on a previously described five-point scale to each dog according to the method described by (Markwell *et al.* 1990; Burkholder and Toll, 2000) using the amount of fat covering the rib area as judged by visual inspection and palpation. The five-point scoring system ranges from: 1, very thin; 2, underweight; 3, ideal; 4, overweight; and 5, obese. The weight and age of all the dogs were determined and documented.

III. RESULTS

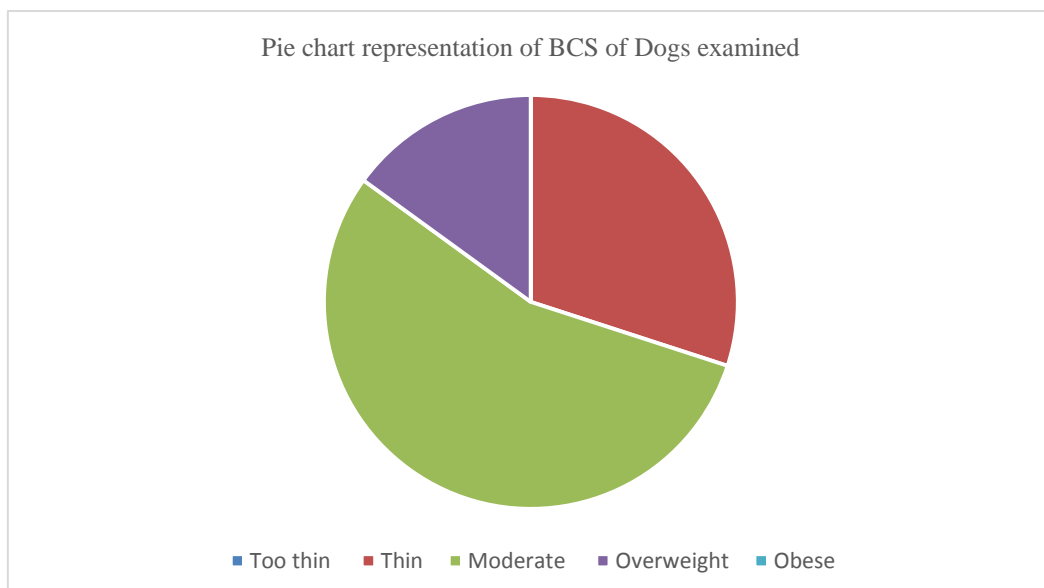
Physical status assessment of dogs using BCS is quick and less expensive. The results are presented in Table1 &2. All the dogs examined in this study falls under three scales of BCS; those categorized as thin (scale 2) were 6 (30%) and their ribs, lumber vertebrae and pelvic bones were visible, no palpable fat with minimal loss of muscle mass. Those categorized as moderate (scale 3): Their ribs were easily palpable, with minimal fat covering, abdominal tuck were evident when viewed from above and they were 11(55%). Those categorized as overweight (scale 4): Their ribs were palpable but with difficulty, noticeable fat deposits over lumbar area and base of tail and abdominal tuck were absent; they were 3 (15%) (Table2). In all the dogs examined there was neither too thin (scale 1) nor Obese (scale 5). The ratios of male to female of dogs under this study were 13:7 respectively (Table 2).

Table1. Physical characteristic of dogs used in this study

S/No	Gender	Age (years)	Body weight (Kg)	Body Condition Scoring (BCS out of 5)
1	Male	9	25.5	3
2	Male	2	16	3
3	Female	2	13.5	3
4	Male	7	12.5	2
5	Female	7	15	2
6	Male	6	18	3
7	Female	8	19	3
8	Male	5	21	4
9	Male	4	21	4
10	Female	7	20.5	3
11	Male	7	25.5	3
12	Male	6	17	2
13	Male	7	19	3
14	Female	4	19	3
15	Male	3	13	2
16	Male	3	14	2
17	Female	4	10	3
18	Male	5	9.5	3
19	Male	6	10.5	4
20	male	7	17	3

Table2. Percentage of dogs assigned to body condition scoring (BCS)

BCS	Number of Dogs Assigned	Male/Female Ratio	%
Too thin (1)	0	0/0	0
Thin (2)	6	4/2	30
Moderate (3)	11	7/4	55
Overweight (4)	3	2/1	15
Obese (5)	0	0/0	0
Total	20	13/7	100



IV. DISCUSSION

The percentage of dogs categorized as moderate in this study suggest that dogs used for hunting in Maiduguri are relatively taken care of by their owners. According to some of the hunters, after their hunting expedition, the meat hunted are eaten together with their dogs in order to boost their morals for further actions. This explains the reason why none of the dogs examined under BCS were categorized as too thin. The average number of dogs assigned to BCS scales in this study is also similar to work reported by (Mawby *et al.* 2004). The 30% of dogs that were considered as thin (scale 2) could be as a result of some factors as reported by (Omude *et al.* 2010); that a variety of factors have been suggested to influence the number of dogs in these categories, these include socio economic status of owners, availability of food, and uncontrolled breeding. The reasons for increasing stray dog population are inability for owners to adequately provide food and shelter for the dogs and ignorance of basic responsibilities of pet owners. Findings from this study agree with the report of Okoh (1988) that dog owners keep dogs for a variety of reasons, especially as security guards and hunting. A larger sample size of animals should have been used to determine the reproducibility of these results and to increase the statistical power of the data. However dogs are not readily domesticated in the study area as they are sometimes seen as unclean animals (Roger, 1995). The accuracy of five-point BCS in assessment of physical status cannot be evaluated and compared due to lack of comparison with a gold standard method of measuring fat body mass (Ishida, 2007). In conclusion, the 15% that were categorized as overweight could be as a result of other incriminating factors including metabolic disorder; as the hunters in the study area may not have so much to feed their dogs that can lead them to obesity. As a result, there is need for further study to investigate other factors responsible for overweight in dogs in the study area.

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