A VISUAL HEALTH ASSESSMENT OF CAPTIVE ASIAN ELEPHANTS UNDER DIFFERENT MANAGEMENTAL CONDITIONS IN KERALA*

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Abstract

The present study was carried out on 60 captive Asian elephants from the various districts of Kerala. The elephants in this state were maintained under different managemental conditions. They were grouped into elephants owned by individuals, elephant owned by various temples, elephant of Guruvayoor Devaswom and elephants maintained by Forest and Wildlife department of Kerala. All the animals were visually assessed on the basis of scoring certain parameters. A statistical analysis was carried out to find the mean ranks of each group for each parameter. The findings were correlated with the managemental conditions.

Keywords: *Captive Asian elephants, Management, visual assessment, mean ranks, correlation.*

Managemental differences in each of the various facilities maintaining elephants makes it difficult to study and monitor various aspects of health conditions in elephants. Thus in field conditions, a visual assessment of the health of the animals may prove beneficial. Certain parameters such as skin condition, presence of wounds and abscesses, ocular conditions, foot conditions, dung consistency, appetite and body conditions scoring were some of the parameters used previously to assess the health and welfare of other wild animals in captivity (Wemmer *et al*., 2006).

Materials and Methods

The study was conducted on captive Asian elephants which were grouped under different managemental conditions:

Group 1 : Elephants owned by individuals (14);

Group 2 : Temple elephants (13);

Group 3 : Elephants of Guruvayoor Devaswom (20);

Group 4 : Elephants maintained by Forest and Wildlife department, Kerala (13)

Managemental aspects such as feeding, housing and amount of work given to the elephants were recorded. Previous history of ailments if any was taken into consideration. De-worming and vaccination schedules were noted. Each parameter studied for visually assessing the animals were scored wherein the lowest score was given to the animal with poorest health condition and highest score to the normal health condition (Table 1). Health of elephants was visually assessed as per Ramanathan and Mallapur, 2008).

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Table 1. Visual health assessment – Scoring for parameters

Health parameters	Clinical Findings	Scoring
Mucous Membrane	Pale Pink	1 2
Skin condition	Poor, dirty, warty, hyperkeratotic Poor, warty Normal but patches of hyperkeratosis Good	1 2 3 4
Eye condition	Blindness Cataract Corneal opacity Normal	1 2 3 4
Foot condition	Foot fissures Toe nail cracks Normal	1 2 3
Appetite	Anorexia Reduced Normal	1 2 3
Dung	Watery Pasty Reduced Normal	1 2 3 4
Urine	Reduced Colour change Copious	1 2 3
Wounds	Present Absent	1 2
General Demeanor	Recumbent Frequent lying down Listless, absence of incessant motion Swaying tail and trunk, Ear flapping, alert	1 2 3 4
Body condition score:	Emaciated with no fat cover and dorsal ridge prominent Lean with slight fat cover, dorsal ridge prominent Lean with slight fat cover Good flesh cover	1 2 3 4

Results and Discussion

The scores for each parameter were considered and the mean ranks for each of the parameters were statistically calculated using Kruskal-Wallis test (Table 2).

Group I animals:

Out of the 60 elephants included in the study 12 per cent had pale mucous membranes. The elephants owned by individuals had the

Table 2. Visual health assessment of elephants and Mean rank of each group

Parameters	Group I (14)	Group II (13)	Group II (20)	Group IV (13)
Mucous membranes	27.57*	33.54	30.10	29.19
Skin condition	29.00	28.38*	29.80	32.88
Eye condition	30.29	30.13	29.53*	30.31
Wounds	30.1	30.04	29.05*	30.23
Abscess	29.89	29.54	29.05*	32.00
Foot problems	29.79	29.58	29.10*	32.00
Dung	31.18	23.58*	31.10	32.96
Urine	29.89	27.08*	30.53	32.00
Appetite	27.79	26.42*	31.10	34.00
General demeanor	27.04	26.25*	32.05	33.50
Body condition score	29.93	29.38	27.63*	34.31

*Lowest Mean rank, Ranks allotted on the scale of 11-35

least rank for mucous membranes (27.57) suggesting most of the elephants belonging to this group had pale mucous membranes. A lower haemoglobin value due to diseases such as endoparasitism, impaction or iron deficiency might be one of the causes. Pale mucous membranes in privately owned elephants might be due to some harsh restraining methods leading to wounds and blood loss (Ramanathan and Mallapur, 2008).

Group II animals:

About 18.3 per cent of total elephants suffered from skin disorders. The elephants owned by various temples had a lowest rank of 28.38. Elephants which were privately owned had a comparatively drier skin with patches of hyperkeratosis. Most of the privately owned and temple elephants did not have free access to water. Thus poor condition of the skin could be attributed to the fact that animals were not bathed regularly leading to inadequate daily skin care.

Around 6.7 per cent of the elephants had a pasty dung consistency whereas 18.3 per cent passed a reduced quantity of dung and 13.3 per cent had reduced feed intake. The digestive disturbances (change in dung consistency and inappetence) which were more often seen in temple elephants might be attributed to the fact that these elephants were fed on offerings made by devotees and thus may often receive unaccustomed food materials. Similar observations were made by Gokula (1996) on temple elephants in southern India.

Group III animals:

Approximately 8.3 per cent of the captive elephants observed during the study had ocular conditions. Temple elephants were the most affected and frequently occurring conditions included corneal opacity, cataract and complete blindness (Mean rank 29.53). Elephants of the Devaswom had a greater occurrence of abscesses. Chandrasekharan *et al.* (2004) concluded that among the non-contagious diseases of captive Asian elephants in Kerala, foot injuries and abscesses were very common in working elephants.

Foot problems were commonly encountered in these Devaswom animals (Mean rank 29.1) wherein males were more affected than female elephants, which is accordance with the findings of Giridas (2011). This could be because males were tied for prolonged time when they developed musth and during this period maintenance of hygiene and administration of foot care was not possible. A lower body condition was also noticed in elephants of this group (Mean rank 27.63).

Group IV animals:

In the present study the best body condition score was seen in forest department elephants. The good body condition of elephants housed in forest camps could be attributed to the fact that adequate feed was provided and the surrounding natural vegetation and environment played an important role in reducing stress, contributing to a better body condition.

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