



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2023; SP-12(10): 636-641  
© 2023 TPI  
[www.thepharmajournal.com](http://www.thepharmajournal.com)

Received: 04-07-2023  
Accepted: 11-08-2023

Author's details are given below  
the reference section

## A prospective study on lower limb lameness affected horses

**JK Mahla, PV Parikh, KM Panchal, JJ Parmar, NR Amin, PB Dabhi, BR Patel, KG Gajera, MJ Chaudhari, Bhalodi AS, AJ Mayani, AR Mecvan, AJ Dhami and MT Panchal**

### Abstract

A lowerlimb lameness affected horses (n=164) were surveyed during year 2020-21 to 2021-22; where 197 lameness conditions recorded. The breedwise incidence recorded highest 25.61% (42/164) in Sindhi Cross, whereas lameness conditions were recorded higher in Kathiyawadi 24.87% (49/197). The adult horses had highest incidence of lower limb lameness 48.22% as compared to young and old age horses, out of these 55.49% lameness were recorded in males and 44.51% in females. Horse rearing practice based incidence was recorded highest in ceremonial dance horses (36.59%; 60/164), followed by carting horses (22.56%; 37/164), patrolling horses or mounted police horses (17.68%; 29/164), race horses (14.02%; 23/164) and lowest in breeding horses (9.15%; 15/164). Only two breeds Sindhi and Sindhi Cross were used for horse carting purpose; amongst that lameness was observed more in the Sindhi Cross (76.19%; 32/42). Flooring pattern based incidence of lameness was recorded higher (60.37%; 99/164) in the horses those were reared on Pakka floor than in the Kachcha flooring (39.63%; 65/164). Feeding practice based lameness incidence was Unlikely observed higher (45.73%; 75/164) in balanced feed as compared to higher concentrate diet horses (30.49%; 50/164); which might be due to their purpose of rearing e.g. all dance horses and carting horses were maintained on balanced diet, so higher lameness incidence was due to their work output. Hoof trimming interval >3 months showed higher incidence of lameness (38.42%; 63/164). The seasonal impact on lameness incidence was recorded highest in summer (47.20%; 93/197), followed by winter (31.47%; 62/197) and least in the monsoon season (21.32%; 2/197). Forelimb lameness conditions were recorded higher in the left (19.80%; 39/197), whereas right limb showed higher incidence of lameness (19.29%; 38/197) in hindlimb. Amongst 24 Lameness affections, canker had higher incidence of lameness (16.75%; 33/197).

**Keywords:** Bad conformation, lower limb lameness, canker, laminitis

### 1. Introduction

Lameness is broad term used for various types of abnormal walk or difficulties in weight bearing; henceforth present study was undertaken to understand variety of lower limb lameness cases, its incidence based on different rearing practices, age, breed and sexwise was carried out for two years (2020-21 to 2021-22) at Department of Veterinary Surgery and Radiology, College of Veterinary Science and A.H., Anand, KU, Gujarat.

### 2. Materials and Methods

Horses presented with lower limb lameness during two years (2020-21 to 2021-22) were analyzed for age wise, breed wise, sex wise and various management practices based incidences. A total of 197 lameness conditions were recorded in the 164 horses; out of these, 131 affected horses were presented at the department of surgery and radiology for treatment and management, while remaining 33 horses were private owner's / mounted police horses treated at their door step (Table 1).

### 3. Results and Discussion

#### 3.1 Breed and Sex Wise Incidence of Lameness conditions

A total of 164 horses were evaluated and analyzed based on their lower limb lameness (n=197) and we tried to correlate lameness incidences and their correlation with various management practices, age, sex and breedwise (Table 1).

**Corresponding Author:**  
**JK Mahla**  
Assistant Professor, Department  
of Veterinary Surgery and  
Radiology, College of Veterinary  
Sci. & A.H., Kamdhenu  
University, Anand, Gujarat,  
India

**Table 1: Breed and sex wise registered cases for the treatment**

Breed	Sex	Cases registered			Lameness conditions		
		Owner's door step	Surgery Dept.	Total			
Marwadi	Male	5	12	17	32 (19.51%)	20	37 (18.78%)
	Female	4	11	15		17	
Kathiyawadi	Male	2	19	21	41 (25%)	26	49 (24.87%)
	Female	4	16	20		23	
Sindhi	Male	-	4	4	9 (5.49%)	6	12 (6.09%)
	Female	-	5	5		6	
Sindhi Cross	Male	5	17	22	42 (25.61%)	24	47 (23.86%)
	Female	9	11	20		23	
Nondescript	Male	3	21	24	36 (21.95%)	29	46 (23.35%)
	Female	1	11	12		17	
Thorough bred	Male	-	3	3	4 (2.44%)	4	6 (3.05%)
	Female	-	1	1		2	
Total	Male	15	76	91 (55.49%)	109 (55.33%)		
	Female	18	55	73 (44.51%)	88 (44.67%)		
	Overall	33	131	164	197		

Sex wise incidence of lameness in the horses was observed more in the males (55.49%; 91/164) than in the females (44.51%; 73/164). The present findings were supported Halder (2006) [4], whereas findings of Mistry *et al.* (2012) [5], unmatched with present findings, where they found higher lameness incidences in female horses (81.25%) than males (18.75%).

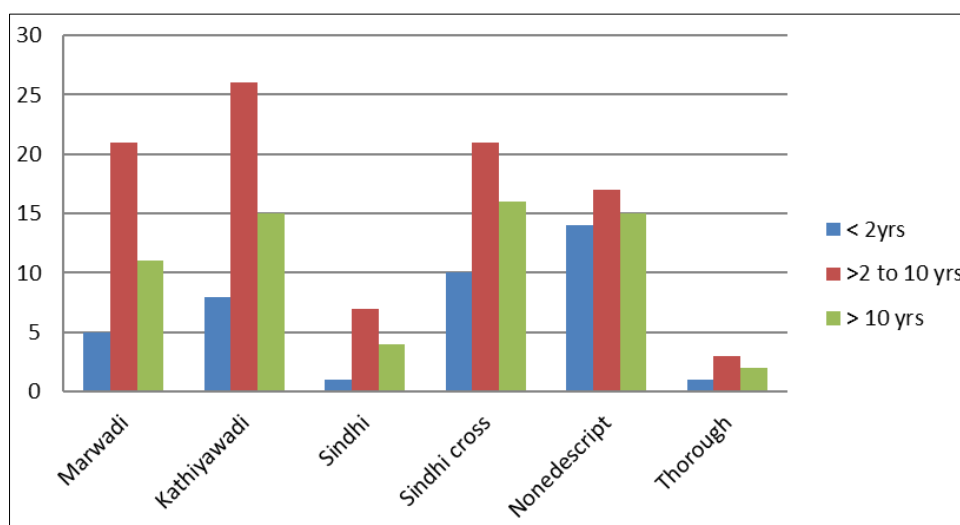
Breed wise horses registered for treatment and management of lameness in the present study was found higher in the Sindhi Cross horses (25.61%; 42/164), followed by Kathiyawadi (25.00%; 41/164), Nondescript (21.95%; 36/164), in Marwadi (19.51%; 32/164) and Thoroughbred horses (2.44%; 4/164).

The lameness conditions were recorded the highest in the Kathiyawadi horses (24.87%; 49/197), followed by Sindhi Cross (23.86%; 47/197), Nondescript (23.35%; 46/197), Marwadi (18.78%; 37/197) and Thoroughbred horses (3.05%; 6/197), these findings were supported by findings made by Balamurugan (2018) [2]; where he reported the highest lameness conditions in Kathiyawadi horses (63%; 17), whereas Ruchikkumar *et al.* (2022) [1] reported higher lameness incidence 52.63% in Nondescript horses.

**3.2 Agewise Lameness Incidence of Clinical Cases:** The horses presented for treatment were analysed agewise and efforts have been made to find out incidence of lameness based on age. The highest incidence of lameness conditions were recorded in the >2 to 10 years of age group (48.22%; 95/197), followed by >10 years of age group (31.98%; 63/197) and < 2 years of age group horses (19.80%; 39/197) (Table 2; Chart 1). The present findings were matched with the findings made by Naeini and Niak (2005) [6]; they had reported higher (32.14%) lameness conditions in the age group of six to eight years.

**Table 2: Agewise distribution of clinical cases**

Breed	< 2yrs	>2 to 10 yrs	> 10 yrs	Total
Marwadi	5	21	11	37 (18.78%)
Kathiyawadi	8	26	15	49 (24.87%)
Sindhi	1	7	4	12 (6.09%)
Sindhi Cross	10	21	16	47 (23.86%)
Nondescript	14	17	15	46 (23.35%)
Thorough	1	3	2	6 (3.05%)
Total	39 (19.80%)	95 (48.22%)	63 (31.98%)	197



**Chart 1: Age and Breed wise Incidence of Lameness**

**3.3 Incidence of Lameness Affections based on Purpose of Horse Keeping:** Horses registered for treatment and management of lameness in the present study were analyzed based on their purpose of rearing. The lameness horses

presented for treatment were of race horses, ceremonial dancers, horse carting horses, breeding horses and patrolling horses.

The incidence of lameness was observed the highest in the

ceremonial dancing horses (36.59%; 60/164), followed by carting horses (22.56%; 37/164), patrolling horses or mounted police horses (17.68%; 29/164), race horses (14.02%; 23/164) and breeding horses (9.15%; 15/164); however we could not found similar prospective lowerlimb lameness reports but, Ruchikkumar *et al.* (2022) [1] reported ceremonial dance horses had highest 49.65% lameness.

The lameness conditions of horses reared for ridding and racing were observed more in the Marwadi horses (28.13%; 9/32), followed by Kathiyawadi horses (19.51%; 8/41) and Nondescript horses (16.67%; 6/36). The present finding of lameness incidence of race horses were might be due to

peoples adopted Marwadi, Kathiyawadi and Nondescript breeds more for racing and ridding purpose in the Gujarat.

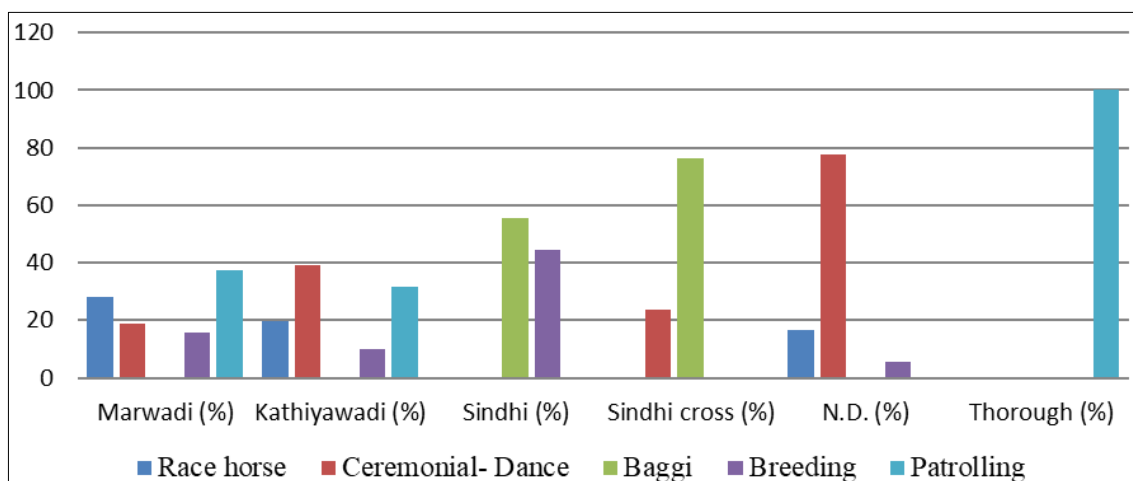
The incidence of ceremonial dance horses were observed the highest (77.78%; 28/36) in Nondescript horses, followed by Kathiyawadi horses (39.02%; 16/41), Sindhi Cross (23.81%; 10/42) and Marwadi horses (18.75%; 9/32). The present finding of the highest lameness incidence in the Nondescript horses was might be due to its mainly reared for ceremonial dance purpose in the Gujarat. Similar findings were made by Ruchikkumar *et al.* (2022) [1], where they reported 49.65% lameness in the ceremonial dance horses.

**Table 3:** Incidence of lameness based on purpose of horse keeping

Purpose of Horse keeping	Marwadi	Kathiyawadi	Sindhi	Sindhi Cross	Nondescript	Thoroughbred	Total
Race horse/Ridding	9 (28.13%)	8 (19.51%)	-	-	6 (16.67%)	-	23 (14.02%)
Ceremonial Dance	6 (18.75%)	16 (39.02%)	-	10 (23.81%)	28 (77.78%)	-	60 (36.59%)
Horse carting	-	-	5 (55.56%)	32 (76.19%)	-	-	37 (22.56%)
Breeding	5 (15.63%)	4 (9.78%)	4 (44.44%)	-	2 (5.55%)	-	15 (9.15%)
Patrolling	12 (37.50%)	13 (31.71%)	-	-	-	4 (100%)	29 (17.68%)
Total	32	41	9	42	36	4	164

The incidence of lameness of horse carting horses were recorded in only two breeds Sindhi and Sindhi Cross; amongst that more lameness was observed in the Sindhi Cross (76.19%; 32/42) followed by Sindhi horses (55.56%; 5/9) (Table 3; Chart 2). The present finding suggest Sindhi and Sindhi Cross were only two breeds preferred for horse carting

purpose in Gujarat and higher lameness incidence in horse carting horses were might be due to horse carting in ceremonial function is slow progressing and steady work in peoples crowd; however we could not found similar reports from other authors during present study.



**Chart 2:** Incidence of lameness based on purpose of horse keeping

The data of incidence of lameness in the breeding horses and patrolling horses were described in the table 3; where Sindhi horses had higher 44.44% lameness amongst all breeding horses, while in patrolling horses Marvadi horses had highest 37.50% lameness affections however we could not draw any statement from the present data of breeding and patrolling horses.

**3.4 Flooring Pattern based Incidence of Lameness:** The lameness cases registered for the treatment were analysed based on their flooring pattern and efforts have been made to find out prevalence of lameness based on flooring and found high (60.37%; 99/164) lameness incidence in the horses those reared on *Pakka* floor than in the *Kachcha* flooring (39.63%;

65/164). The present finding of low lameness incidence on the *Kachcha* flooring were might be due to soft and pliable nature of ground; however we could not found similar reports from the other authors during the study period.

**3.5 Incidence of Lameness based on Feeding Practice:** Mixed diet, more roughage and high concentrate were the three different feeding practices preferred by the horse keepers. The lameness incidences based on feeding practice were observed the highest (45.73%; 75/164) in the horses those maintained on mixed balanced diet, followed by in high concentrate diet horses (30.49%; 50/164) and in more roughage diet horses (23.78%; 39/164) (Table 4).

**Table 4:** Incidence of lameness based on feeding practice

Housing	Marwadi	Kathiyawadi	Sindhi	Sindhi Cross	Nondescript	Thorough	Total (%)	Mean ± SE
More roughage diet	5	7	1	10	16	0	39 (23.78)	6.50±2.43
High concentrate diet	3	13	5	15	14	0	50 (30.49)	8.33±2.63
Mixed balanced diet	24	21	3	17	6	4	75 (45.73)	12.50±3.78

The present finding of higher lameness incidence in the mixed balanced diet horses were might be due to purpose of horse rearing those were maintained on mixed balanced diet viz. dance horses and horse carting horses; however we could not found similar reports from other authors.

**3.6 Incidence of Lameness based on Hoof trimming intervals**

Lameness affected cases registered for treatment were analysed based on their hoof trimming intervals and efforts have been made to find correlation between hoof trimming interval and lameness. The hoof trimming intervals in the lameness cases were recorded from 15 days to 8 months; where regular hoof trimming intervals were observed from 15 days to 3 months, while irregular hoof trimmers were

observed above 3 months to 8 months. The lameness incidence in the horses was observed the highest (38.42%; 63/164) lameness conditions were recorded in > 3 months hoof trimming intervals, followed by (31.71%; 52/164) in the hoof trimming interval 2 to 3 months and minimum (29.88%; 49/164) incidence of lameness was observed in the hoof trimming interval <1 month. (Table 5). The present finding of higher lameness incidence in the horses; where hoof trimming intervals >3 months were might be due to overgrown hooves leads bad conformations and lameness gradually in the horses, whereas comparative higher lameness in <1 month interval of hoof trimming was due to application of rubber shoe on 15 days interval without corrective hoof trimming to provide proper grip on roads.

**Table 5:** Incidence of Lameness based on Hoof trimming intervals

Hoof trimming interval	Marwadi	Kathiyawadi	Sindhi	Sindhi Cross	Nondescript	Thorough	Total (%)
<1 month	18	15	3	7	2	4	49 (29.88)
2 to 3 months	10	18	4	10	10	0	52 (31.71)
> 3 months	4	8	2	25	24	0	63 (38.41)
Total	32	41	9	42	36	4	164(100)

**3.7 Seasonal Incidence of Lameness**

The registered clinical cases of lameness were analyzed seasonally and efforts have been made to find out seasonal incidence of lameness in the horses. The lameness cases in the horses were recorded least in the monsoon season (21.32%; 2/197), winter season stood second highest (31.47%; 62/197) incidence of lameness, while the highest lameness incidence (47.20%; 93/197) were observed in the summer season. The present findings of least lameness in the monsoon season may be due to rain, when majority of equines remained in resting phase; these findings were matched with the findings made by Mistry *et al.* (2012) [5] from Deesa, Gujarat and Ruchikkumar *et al.* (2022) [1] from Anand, Gujarat.

**3.8 Distribution of Lameness based on Limb Involvement**

The limb involvement in the lameness cases were analysed in the present study, where forelimb conditions were recorded higher in the left (19.80%; 39/197), followed by right forelimb (15.74%; 31/197) and bilateral forelimbs (11.17%; 22/197). The hindlimb lameness was found higher in the right limb (19.29%; 38/197), followed by in the left hindlimb (15.23%; 30/197) and in the bilateral hindlimbs (9.14%; 18/197). Apart from these, all four limbs (9.64%; 19/197) get involved in the lameness conditions of horses (Table 6). The present findings were matched with the findings made by Mistry *et al.* (2012) [5]; where they reported all four limbs involvement (13; 7.38%), right hindlimb involvement (18.18%) and left hindlimb involvement (17.61%), while in forelimb left limb had higher (15.90%) incidence as compared to right forelimb (14.20%), whereas Dabareiner *et al.* (2005) [3] studied musculoskeletal lameness associated with 118 racing horses, in which right forelimb (57, 48%) was most commonly affected followed by left forelimb (51, 43%), left hind limb (31, 26%) and right hind limb (25, 21%). While in 31 horses (26%) both forelimbs and in 6 horses (5%) both hind limbs were affected.

**Table 6:** Anatomical distribution of lameness

Body part	Forelimb			Hindlimb			All four limbs
	Left	Right	Bilateral	Left	Right	Bilateral	
Lameness conditions	39	31	22	30	38	18	19
Per cent	19.80	15.74	11.17	15.23	19.29	9.14	9.64

**3.9 Lameness Affections**

**3.9.1 Diagnosis of lameness Lameness Affections**

All horses presented for treatment and management of lameness were under gone detailed clinical and physical examination, followed by confirmatory diagnosis with x-ray in all 164 affected animals. Latero-medial and/or dorso-palmar/dorso-plantar radiographs of affected parts were taken to rule out different lameness conditions associated with bones, while USG was performed to rule out tendon and ligament involvement.

**3.9.2 Types of Lameness conditions**

Amongst 24 different lameness conditions encountered in the present study for the treatment and management; Canker was recorded the highest (16.75%; 33/197) in horses, followed by laminitis (16.24%; 32/197), thrush (10.66%; 21/197), bowed tendon (9.14%; 18/197), abnormal angle/ over-grown hooves (6.09%; 12/197), under-run heel (4.57%; 9/197), tenosynovitis (3.55%; 7/197), navicular disease (3.05%; 6/197), ring bone (3.05%; 6/197), fracture (3.05%; 6/197), hoof foreign body (3.05%; 6/197), splint bone (2.54%; 5/197), hoof abscess (2.54%; 5/197), wind puff (2.54%; 5/197), spavin (2.03%; 4/197), quittor (2.03%; 4/197), arthritis (2.03%; 4/197), osselets (1.52%; 3/197), side bone (1.02%; 2/197), buttress foot (1.02%; 2/197), carpalis (1.02%; 2/197), club foot (1.02%; 2/197), accidental tendon rupture (1.02%; 2/197) and osteoporosis (0.51%; 1/197) (Table 7).

**Table 7:** Types of lameness conditions

Lameness conditions	Marwadi	Kathiya wadi	Sindhi	Sindhi Cross	Nondescript	Thorough bred	Total
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Laminitis	10(5.08)	7 (3.55)	3 (1.52)	5 (2.54)	5 (2.54)	2 (1.02)	32(16.24)
Navicular disease	1 (0.51)	2 (1.02)	0 (0.00)	1 (0.51)	2 (1.02)	0 (0.00)	6 (3.05)
Spavin	1 (0.51)	0 (0.00)	0 (0.00)	2 (1.02)	0 (0.00)	1 (0.51)	4 (2.03)
Canker	0 (0.00)	9 (4.57)	0 (0.00)	9 (4.57)	15(7.61)	0 (0.00)	33(16.75)
Thrush	1 (0.51)	4 (2.03)	2 (1.02)	6 (3.05)	7 (3.55)	1 (0.51)	21(10.66)
Quittor	1 (0.51)	1 (0.51)	1 (0.51)	0 (0.00)	1 (0.51)	0 (0.00)	4 (2.03)
Side bone	1 (0.51)	1 (0.51)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	2 (1.02)
Splint bone	2 (1.02)	1 (0.51)	0 (0.00)	2 (1.02)	0 (0.00)	0 (0.00)	5 (2.54)
Ring bone	0 (0.00)	2 (1.02)	0 (0.00)	2 (1.02)	2 (1.02)	0 (0.00)	6 (3.05)
Butress foot	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.51)	1 (0.51)	0 (0.00)	2 (1.02)
Carpitis	0 (0.00)	1 (0.51)	0 (0.00)	1 (0.51)	0 (0.00)	0 (0.00)	2 (1.02)
Arthritis	1 (0.51)	1 (0.51)	1 (0.51)	0 (0.00)	0 (0.00)	1 (0.51)	4 (2.03)
Tenosynovitis	2 (1.02)	1 (0.51)	1 (0.51)	1 (0.51)	1 (0.51)	1 (0.51)	7 (3.55)
Bowed tendon	6 (3.05)	5 (2.54)	1 (0.51)	2 (1.02)	4 (2.03)	0 (0.00)	18 (9.14)
Fracture	1 (0.51)	2 (1.02)	0 (0.00)	2 (1.02)	1 (0.51)	0 (0.00)	6 (3.05)
Club foot	0 (0.00)	1 (0.51)	0 (0.00)	1 (0.51)	0 (0.00)	0 (0.00)	2 (1.02)
Osselets	0 (0.00)	1 (0.51)	0 (0.00)	1 (0.51)	1 (0.51)	0 (0.00)	3 (1.52)
Accidental tendon rupture	0 (0.00)	1 (0.51)	0 (0.00)	1 (0.51)	0 (0.00)	0 (0.00)	2 (1.02)
Abnormal hoof angle	1 (0.51)	2 (1.02)	2 (1.02)	6 (3.05)	1 (0.51)	0 (0.00)	12 (6.09)
Underrun heel	5 (2.54)	4 (2.03)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	9 (4.57)
Hoof abscess	1 (0.51)	1 (0.51)	0 (0.00)	2 (1.02)	1 (0.51)	0 (0.00)	5 (2.54)
Hoof foreign body	2 (1.02)	1 (0.51)	0 (0.00)	1 (0.51)	2 (1.02)	0 (0.00)	6 (3.05)
Wind puff	0 (0.00)	1 (0.51)	1 (0.51)	1 (0.51)	2 (1.02)	0 (0.00)	5 (2.54)
Osteoporosis	1 (0.51)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (0.51)
Total	37	49	12	47	46	6	197(100)

The present findings were unmatched with others; however we found few reports with limited lameness conditions in horses from different authors *viz.* Ruchikkumar *et al.* (2022) [1] reported musculoskeletal system (29.03%), colic (19.52%), wound (16.63%), eye (10.52%), fracture (4.41%), genital system (3.73%), neoplasm (3.39%), sinus, fistula and abscess (2.20%), urinary system (2.03%), digestive system (1.69%), hernia (0.33%) and others (6.45%) in retrograde survey of lameness at Anand, while Sadan *et al.* (2017) [7]; they reported clinico-radiographic study on 92 (24 horses and 68 donkeys) working equines for distal limb conditions at Luxor city, and found fifteen types of distal limb conditions. In working equines, the most prevalent affection was side bone (4.35%) and fracture of the metacarpal bone (4.35%), followed by high and low ring bone (3.26%), and traumatic arthritis of the fetlock joint, subluxation of coronopedal joint, fractures of first phalanx, second phalanx and puncture wounds in the hoof (2.17%) each, whereas hoof abscess, suspensory ligament desmitis and navicular disease (1.09%) each were the lowest prevalent conditions in horses. They stated that radiography still offers a satisfactory tool for diagnostic imaging in equine distal foot conditions, whereas Vadaliya *et al.* (2011) [8] recorded the foot affections in equines as; buttress foot (4%), thrush (12%), laminitis (16%), laminitic ring (20%), hoof wall crack (20%), over grown hooves (24%) and over growth of frog and bar (4%). The incidence of over grown hooves was the highest (24%), whereas, buttress foot and over growth of frog and bar was low (4%).

#### 4. Conclusions

- Breed wise lower limb lameness was recorded higher in Sindhi cross, whereas lameness affections were observed more in the Kathiyawadi horses.
- Agewise incidence of lameness was recorded higher in adult horses as compared to young and old age horses; whereas males had higher incidence of lameness as compared to females.
- Ceremonial dance horses had higher incidence of

lameness as compared to rest other purpose of rearing.

- Sindhi and Sindhi Cross were only two breeds preferred for horse carting purpose; amongst that lameness was observed more in the Sindhi Cross horses.
- Flooring pattern based incidence of lameness was recorded higher in the *Pakka* floor.
- Feeding practice based lameness incidence was recorded higher in the balanced diet than the horses reared on higher concentrate diet; where higher lameness incidence in balanced diet was due to their purpose of rearing *viz.* dance horses, cart horses etc.
- Hoof trimming interval above 3months had higher incidence of lameness.
- The seasonal incidence of lameness was recorded highest in summer.
- Forelimb lameness conditions were recorded higher in the left forelimb, whereas right limb showed higher incidence of lameness in hindlimb.
- Canker was recorded higher amongst 24 various lameness affections recorded in the present study.

#### 5. References

1. Anjana RR, Mahla JK, Parikh PV. Retrospective Study on Incidence of Equine Affections Reported at Veterinary Clinical Complex, Anand, Gujarat, India. *Indian Journal of Veterinary Sciences & Biotechnology*. 2022;18(1):91-94.
2. Balamurugan K. Osteoarthritis of equine lower limb and its management with autologous platelet rich plasma therapy. M. V. Sc. Thesis. Tamil Nadu Veterinary and Animal Sciences University, Chennai; c2018.
3. Dabareiner RM, Cohen ND, Carter GK, Nunn S, Moyer W. Musculoskeletal problems associated with lameness and poor performance among horses used for barrel racing: 118 cases (2000–2003). *Journal of the American Veterinary Medical Association*. 2005;227(10):1646-1650.
4. Halder S. Clinical, radiographic and arthroscopic

- evaluation of joint affections in horses. Ph.D. Thesis. Tamilnadu Veterinary and Animal Sciences University, Chennai; c2006.
5. Mistry JN, Nirurkar SS, Patel PB, Chaudhary SR, Dabas VS. Equine Lameness - A Retrospective Study of 176 Animals. *Intas Polivet*. 2012;13(2):187-191.
  6. Naeini AT, Niak BT. Field study of the prevalence of lameness in horses in three provinces of Iran. *Pakistan Veterinary Journal*. 2005;25(3):140.
  7. Sadan MA, Abdel HA, Metwally AA, Soliman AS. Clinico radiographic studies on the prevalent distal limb affections in working equine at luxor city. *J. Adv. Vet. Anim. Res.* 2017;7(1):24-32.
  8. Vadalia JV, Tank PH, Nikam PN, Desai BD, Javia CB, Katare M. Clinical documentation of foot affections in unsound working horses. *Indian Journal of Field Veterinarians (The)*. 2011;6(4):24-27.

#### **Author's Details**

##### **JK Mahla**

Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **PV Parikh**

Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **KM Panchal**

Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **JJ Parmar**

Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **NR Amin**

Teaching Associate, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **PB Dabhi**

Senior Research Associate, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **BR Patel**

Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **KG Gajera**

Post Graduate Scholar, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **MJ Chaudhari**

Post Graduate Scholar, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **Bhalodi AS**

Post Graduate Scholar, Department of Veterinary Surgery and

Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **AJ Mayani**

Post Graduate Scholar, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **AR Mecvan**

Assistant Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **AJ Dhami**

Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India

##### **MT Panchal**

Professor, Department of Veterinary Surgery and Radiology, College of Veterinary Sci. & A.H., Kamdhenu University, Anand, Gujarat, India