

Assessment of pack animal welfare in and around Bareilly city of India

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Abstract

Aim: To assess the welfare of pack animal: Pony, Horse, Mule and Donkey in and around Bareilly city.

Materials and Methods: The present study was carried out in Bareilly city and Izatnagar area of Bareilly district of Uttar Pradesh in the year 2009. Representative sample of 100 pack animal owners were selected to get the information regarding various social, personal and economic attributes of the pack animal. Further during interviewing different health and behavior pattern of animals was keenly examined. Analysis has been done as per standard procedures.

Results: Most of the pack animal owners (98%) were aware of the freedom from hunger and thirst. Majority of respondents (96, 93, 81 & 85 percent) were aware of freedom from injury and disease, pain and discomfort, to express normal behavior and adequate space and freedom from fear and distress. Respondents (85%) believed that they themselves were responsible for the welfare of the animals. Most of the owners (48.8%) employed their animals for work for 9-10 hrs with rest (96.5%) in between work and most (88.3%) indulged into beating to compel the animals to work. All pregnant animals were put to work in the first two trimesters of pregnancy. Upon physical examination, pack animals showed abnormality in eyes (49%), abnormality in gait (40%) and limb deformity (39%). Most animals (75%) had tether lesions and 34 percent animals avoided or were aggressive to observer. Majority (74.1%) of the owners housed their animals in a part of their own residence with improper drainage and cleaning. Most of the owners (82%) consulted Veterinary doctors for treatment and believed in allopathic medicine (57%). Vaccination was not carried out on most (96%) of the animals. All the animals were feed green fodder but practice of supplementation of minerals to animals was only among 11 percent owners.

Conclusions: Present findings provide baseline information on welfare activities followed by pack animal owners and status of pack animals in regards to animal welfare. A more detailed in-depth study is needed regarding welfare issues in all varied pack animals, designing of scientific efficient carts, working hours and special requirements related to feed and other managerial practices for pack and draught animals. Rules and Regulations advocated by Government Act can be used to enforce welfare laws of the animals but thrust should be more in regard to development of awareness among owners for animal welfare.

Keywords: pack animal, transport, welfare

Introduction

According to World Veterinary Association (WVA), animal welfare is a scientific discipline which incorporates "applied aspects of ethology, bioethics and the concepts of suffering and well being". Majority of the estimated 94 million horses, donkeys and mules in developing countries [1] are utilized for transporting goods by pack or by cart, being ridden, in agriculture or for ceremonial purposes. Draught animals along with humans provide an estimated 80% of the power input on farms in developing nations [2] but animals often suffer from maltreatment, overloading and ill feeding during no work period [3].

Traditionally used pack animals include camels, pony, horses, mules and donkeys found around urban areas. Since these animals are working animal, they are always expected that they may undergo suffering in

day to day life due to stress, strain due to overwork, fatigue due to working with poor health, feed, nutrition and drinking water. Pain due to unscientific ill-fitting equipments, harness devices, poorly designed agricultural equipments and carts. Non availability of proper veterinary care, working under hot and dusty environment, lack of proper shelter, care and management, crude castration, restraining and tethering devices, walking long distances and overloading, poor handling during loading and unloading and inhumane slaughter is common. [4]. Most of the animal owners are not even aware of animal welfare practices; as a result animals have to undergo significant suffering due to improper handling, transport and husbandry practices [5]. Combination of direct and indirect indicators as per information like body condition, sometimes along with other animal based measures, plus indirect measures in the form of resource examination and/or an owner questionnaire has been used to measure animal welfare [6,7]. Prevention of Cruelty to Animals Act 1960 has

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Table-1. Distribution of pack animal owners according to the awareness about pack animal welfare, ethical values and the animals health and behavior parameters

A. Distribution of pack animal owners according to the awareness about pack animal welfare						
Attributes		Pony(n=30)	Horse(n=37)	Mulen=30	Donkey(n=3)	Total(n=100)
Freedom from thirst and hunger		30 (100)	37 (100)	28 (93.3)	3 (100)	98 (98)
Freedom from injury and disease		29 (96.7)	36 (97.3)	28 (93.3)	3 (100)	96 (96)
Freedom from pain and discomfort		28 (93.3)	35 (94.6)	27 (90)	3 (100)	93 (93)
Freedom to express normal behavior & enough space to move		23 (76.7)	33 (89.2)	23 (76.7)	2 (66.7)	81 (81)
Freedom from fear and distress		24 (80)	31 (83.8)	27 (90)	3 (100)	85 (85)
Animals should be given good care on ethical ground		21 (70)	32 (86.5)	24 (80)	2 (66.7)	79 (79)
Do you know about SPCA and PETA like Animal Welfare agency		0 (0)	2 (5.4)	0 (0)	0 (0)	2 (2)
Responsibility for animal welfare	Your self	23 (76.7)	35(94.6)	24 (80)	3 (100)	85 (85)
	Veterinary doctor	2 (6.7)	0 (0)	1(3.33)	0 (0)	3 (3)
	Govt. agency	5 (16.7)	2 (5.4)	5 (16.7)	0 (0)	12 (12)

B. Distribution of respondents in respect to practices related to welfare and ethical importance						
Criteria		Pony(n=27)	Horse owners(n=30)	Mule(n=26)	Donkey(n=3)	Total(n=86)
Working hours	i) 7-8	4 (14.8)	2 (6.7)	2 (7.7)	3 (100)	11 (12.8)
	ii) 8-9	7 (25.9)	5 (16.7)	2 (7.7)	0 (0)	14 (16.3)
	iii) 9-10	13 (48.1)	16 (53.3)	13 (50)	0 (0)	42(48.8)
	Above 10	3 (11.1)	7 (23.3)	9 (34.6)	0 (0)	19 (22.1)
Employed in noon	YES	20 (74.1)	22 (73.3)	21 (80.8)	2 (67)	65 (75.6)
	NO	7 (25.9)	8 (26.7)	5 (19.2)	1(33)	21 (24.4)
Rest after work	YES	25 (92.6)	30 (100)	25 (96.1)	3 (100)	83 (96.5)
	NO	2 (7.4)	0 (0)	1(3.8)	0 (0)	3 (3.4)
Beating practiced	YES	23 (85.2)	27 (90)	25 (96.1)	1 (33)	76 (88.3)
	NO	4 (14.8)	3 (10)	1 (3.8)	2 (67)	10 (11.6)
Pregnant animals worked	YES	27 (100)	30 (100)	26 (100)	3 (100)	86 (100)
	NO	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

C. Health and behavior parameters of pack animals						
Observations of health parameters		Pony(n=30)	Horse(n=37)	Mule(n=30)	Donkey(n=3)	Total(n=100)
Coat-dry/matted/uneven		6 (20)	7 (18.9)	4 (13.3)	0 (0)	17 (17)
Ectoparasites present		4 (13.3)	5 (13.5)	5 (16.7)	2 (66.7)	16 (16)
Mucous membrane abnormal		5 (16.7)	5 (13.5)	3 (10)	0 (0)	13 (13)
Eyes abnormal		16 (53.3)	17 (45.9)	14 (46.7)	2 (66.7)	49 (49)
Teeth abnormality/missing		3 (10)	4 (13.3)	2 (6.7)	0 (0)	9 (9)
Abnormal gait		13 (43.3)	14 (37.8)	12 (40)	1 (33.3)	40 (40)
Limb deformity		10 (33.3)	13 (35.1)	15 (50)	1 (33.3)	39 (39)
Tether lesion or scar		25 (83.3)	26 (70.3)	22 (73.3)	2 (66.7)	75(75)
Observations of behavior						
General attitude	Alert	27 (90)	28 (75.7)	26 (86.7)	1 (33.3)	82 (82)
	Apathetic/depressed	3 (10)	9 (24.3)	4 (13.3)	2 (66.7)	18 (18)
	No response	16 (53.3)	15 (40.5)	14 (46.7)	3 (100)	48 (48)
	Friendly approach	6 (20)	7 (18.9)	5 (16.7)	0 (0)	18 (18)
Response to observer	Avoidance/aggression	8 (26.7)	15 (40.5)	11 (36.7)	0 (0)	34 (34)

Values in parenthesis are in percentage (%)

set up some guidelines which are not followed. Therefore the focus of this study is to document the welfare issues related to use of pack animals which are found around the Bareilly city.

Materials and Methods

The present study was carried out in Bareilly city and Izatnagar area of Bareilly district of Uttar Pradesh in the year 2009. The pack animals used in the city area of these places mainly worked in mandis, for transportation of construction materials and goods and for transportation of passengers mainly hitched on tongas or loaded on their back. By restoring proportionate sampling one hundred pack animals and their owners were selected for the purpose of study, which was the representative sample of the area. Information regarding various social, personal and economic attributes of the pack animal owners was collected by structured and pretested interview schedule by personal interviewing of respondents and keen physical observation of the animals at their places. Observations regarding animals were recorded either as present/absent or as degree of severity. Different practices adopted by pack animal owners were also keenly observed, recorded and compared as per ethical standards stated through various rules and

legislations set by government of India for draught and pack animal welfare. Observers worked in pairs, with one person making observations and the other prompting observations from the checklist and recording the results. Analysis has been done as per standard procedures.

Results and Discussion

Results revealed that most of the pack animal owners (73%) were in the middle age group (18-45 years). Among them 57 percent owners revealed that animal husbandry was their main source of income and majority of the owners had experience in rearing and earning from pack animals. Majority of the horse and pony owners earned more than Rs. 1800 per month. Further, though they were neither aware of scientific rearing nor the rules and regulations, but majority of respondents were aware of need for five freedoms. However this awareness about animal freedoms reflected only out of humanity ground. Among respondents 98, 96, 93, 81 and 85 percent were aware about freedom from thirst and hunger, injury and disease, pain and discomfort and expression of normal behavior and adequate space and freedom from fear and distress respectively (Table 1). Only 2 percent were aware about non government organization (NGOs) like

Table-2. Distribution of respondents according to following attributes of housing welfare measures

Housing welfare measures		Pony (n=27)	Horse (n=29)	Mule (n=22)	Donkey*	Total
Type of house	i) Part of residence	21 (77.8)	19 (65.5)	17(77.3)	(n=3) 3 (100)	(n=81) 60 (74.1)
	ii) Separate	6 (22.2)	10 (34.5)	5 (22.7)	0(0)	21 (25.9)
Floor space of covered area*	Optimum	7 (25.9)	5 (17.2)	8 (36.4)	(n=78) N.A.	20 (25.6)
	Not optimum	20 (74.1)	24 (82.8)	14 (63.6)		58 (74.4)
Height of house*	Optimum	0 (0)	2 (6.9)	2 (9.1)	N.A.	(n=78) 4 (5.1)
	Not optimum	27 (100)	27 (93.1)	20 (90.9)		74 (94.9)
Ventilation of house*	Good	27 (100)	29 (100)	22 (100)	N.A.	(n=78) 78 (100)
	Poor	0 (0)	0 (0)	0 (0)		0(0)
Cleanliness of house*	Dirty	16 (59.3)	19 (65.5)	16 (72.7)	N.A.	(n=78) 51 (65.4)
	Clean	11 (40.7)	10 (34.5)	6 (27.3)		27 (34.6)
Type of floor	Kutchra	16 (59.3)	19 (65.5)	16 (72.7)	(n=3) 3(100)	(n=81) 54 (66.7)
	Pucca	11 (40.7)	10 (34.5)	6 (27.3)	0(0)	27 (33.3)
Drainage*	Good	2 (7.4)	2 (6.9)	0 (0)	N.A.	(n=78) 4 (5.1)
	Poor	25 (92.6)	27 (93.1)	22 (100)		74 (94.9)
Means of tying animal	I. Rope	15 (55.6)	16 (55.2)	16 (72.7)	(n=3) 3(100)	(n=81) 50 (61.8)
	ii. Plastic rope	10 (37)	10 (34.5)	4 (18.2)	0(0)	24 (29.6)
	iii. Iron chain	2 (7.4)	3 (10.3)	2 (9.1)	0(0)	7 (8.6)

*indicates data collected by observation. *Donkey owners were reluctant to allow data collection by observation

Society for Prevention of Cruelty on Animals (SPCA) and People for Ethical Treatment of Animal (PETA). Majority (85%) of them believed that they themselves were responsible for the animal's welfare.

The Table 1 also reveals that majority (70.9%) of the owners were using their animals for transportation or carrying load for more than 9 hours a day in average which is in agreement with [8]. Nearly 75.6 percent owners engaged animals to work at hot afternoon or noon. Though work generally was not taken at single stretch by most (96.5%) of the owners and rest was given in between works. As per Prevention of Cruelty to Draught and Pack Animals Rule (1965), no person shall use any animal for drawing any vehicle or carrying any load for more than 5 hours continuously without break or rest for the animals. Owners (88.3%) used to beat the animals as a controlling measure or to make the animals work harder. All the owners took work from pregnant animals up to third trimester of pregnancy but most did not use their animals during last month of pregnancy. As most of the owners possessed only one or two animals and their sole source of income were these animals so the owners were compelled to take work from them even during pregnancy which is in agreement with [8].

Observations regarding health revealed (Table-1) that 17 percent of the animals showed unhealthy skin coat, 16 percent having ectoparasite infestation and 13 percent with abnormal mucous membrane. The present finding is in line with the finding of [9] who found 11% of the equines to be infested with ectoparasites. This may be due to improper knowledge of health care, feeding and irregular or no medication for parasites. Skin lesions have been reported as one of the major prevalent and severe welfare issue in working equines [10,11]. Astonishingly 49 percent animals showed eye problems resembling the findings of [12], which may be due to pollution, dust in the working area along with

improper feeding and fly menace. Only 9 percent showed teeth problem but huge no of animals i.e. 40, 39 and 75 percent showed abnormal gait, limb deformity and tether lesions or scars respectively which resembles the findings of [12,13]. Lameness is often associated with pain responses in the feet and lower joints [14]. Ill fitted harness, age old unscientific tongas, over work, improper feeding and care could be the reasons for such findings. Development of effective interventions to prevent harness wounds needs scientific studies into the development of most efficacious harnesses taking into considerations of local knowledge, availability and need [10]. Table-1 also reveals that though majority of the animals (82%) were alert but 18 percent of them were in apathetic/depressed state. Generally apathetic behavior is associated with other non-responsive behaviors and with varied physical problems [15], so it is consistent with poor welfare as exhaustion or a depression-like state. Though 48 percent animals showed no response to the observers but 34 percent showed aggression/avoidance. Aggressive behavior towards observer may indicate a welfare problem as it correlates with avoidance of humans, probably indicating fear [15]. Freedom from fear and distress [16] is one of the five freedoms which should be ensured to animals.

Table-2 revealed that 74.1 percent pack animal owners kept their animal in the paddock which was part of their own residence and rest (25.9%) owners made separate paddock for the animals. However, floor space was not adequate (74.4%) in both the situations. Donkey owners though allowed physical examination of their animals and answered the interview schedule but were reluctant to allow entry in their premises and collect data regarding parameters of housing by observation may be due to some taboo or fear. Housing provided to animals did not had proper height (94.9%)

Table-3. Distribution of respondents according to healthcare and feeding welfare practices

Health care practices	Pony (n=30)	Horse (n=37)	Mule (n=30)	Donkey (n=3)	Total (n=100)
A. Distribution of respondents according to following health care practices					
Advice taken regarding sick animals					
i. Vet. doctor	25 (83.3)	29 (78.4)	28 (93.3)	0 (0)	82 (82)
ii. Quack	2 (6.7)	1 (2.7)	0 (0)	1 (33.3)	4 (4)
Others	3 (10)	7 (18.9)	2 (6.7)	2 (66.7)	14 (14)
Any vaccination done					
Yes	0 (0)	4 (10.8)	0 (0)	0 (0)	4 (4)
No	30 (100)	33 (89.2)	30 (100)	3 (100)	96 (96)
Treatment of ectoparasite					
Yes	22 (73.3)	24 (64.9)	21 (70)	1 (33.3)	68 (68)
No	8 (26.7)	13 (35.1)	9 (30)	2 (66.7)	32 (32)
Treatment of animal					
i. Using ITKs	12 (40)	11 (29.7)	13 (43.3)	2 (66.7)	38 (38)
ii. Allopathic drugs	15 (50)	25 (67.6)	16 (53.3)	1 (33.3)	57 (57)
iii. Homeopathic drugs	0 (0)	1 (2.7)	1 (3.3)	0 (0)	2 (2)
Working injured/ diseased animal					
Often	27 (90)	35 (94.6)	29 (96.7)	3 (100)	94 (94)
Never	3 (10)	2 (5.4)	1 (3.3)	0	6 (6)
B. Distribution of respondents according to feeding welfare practices					
Feeding green fodder	30 (100)	37 (100)	30 (100)	3 (100)	100 (100)
Feeding concentrate / cereal by product	30 (100)	30 (81.1)	30 (100)	2 (66.7)	99 (99)
Feeding mineral mixture	3 (10)	2 (5.4)	6 (20)	0 (0)	11 (11)
Feeding salt	9 (30)	12 (32.4)	11 (36.7)	0 (0)	32 (32)

Values in parenthesis are in percentage (%)

but in most cases the houses had proper ventilation as most of the houses had only temporary or no surrounding wall (mostly open in the sides) leading to easy and proper passage of air. No scientific provision of drainage was followed and disinfectants were seldom applied in the paddock. Reports suggest that draught animal's shelter should preferably have a sloping floor, should be clean, and dung should be removed daily to reduce the problem of flies. Shelter needs periodical disinfection and clean bedding [17]. Ropes were generally used to tie the animals; sometimes chains were also applied.

Table-3 reveals the data regarding welfare related to health care management. In case of major or serious illness owners mostly treated their animals by veterinary doctors (82%) using allopathic drug (57%) which doesn't resemble the findings of [18,19] where they found that the animals were mostly treated by traditional medicine without the help of registered veterinarians. Present findings may be due to availability of veterinarians in the city area. But only 68 percent owners went to veterinarian for treatment of ectoparasites which they considered as minor or no ailment. Further, 96 percent owners did not vaccinate their animals as prophylactic measure. Though 38 percent respondents tried Indigenous Technical Knowledge (ITKs) as first aid treatment for minor ailments but major 57 percent used allopathic medicine in curing sick animals. Being their sole source of income often they took work from sick animals if it is in a position to work as most of the time it was observed that owner had one or two animal.

Table-3 also gives the data regarding feeding practices followed by animal owners. Both greens and concentrate were provided by almost all owners but subject to availability, price and without any scientific considerations. The present data resembles the findings of [18] where he found that all the equines were

provided available feed, mainly grass and few cereal by-products. Mineral mixture was rarely fed as a routine; however it was fed mainly if prescribed by a veterinary doctor while attending its sickness when it was taken to hospital. Feeding salt was generally followed in summer months.

Most (94.11 %) of the horses and mules carried more than 750 kg load at a time. As per Cruelty to Draught and Pack Animals Rules 1965 [20] loading more than 750 kg weight on a two wheeled pneumatic fitted tires fitted with horse or mule is prohibited. The present findings are in line with the findings of [21] who also stated that majority of the equines were overloaded and overworked. So majority didn't followed ethical and legal standards and which may be punishable under law. Majority (87.5%) of Pony owner overloaded their animals. Majority (83%) of the owners carried more than 6 persons on their tongas.

While interviewing, owners also expressed that no financial gain was possible on following any welfare activities. The main reasons could be lack of money as revealed by all owners and lack of information (94%) on proper welfare which always hampered keeping quality of the animals. Low life expectancy, invariably due to misuse and improper veterinary aid is common in equines but nations where animal welfare is in practice, the life expectancy is up to 30 years [22].

Conclusion

This study has provided the baseline information on welfare activities followed by pack animal owners and status of pack animals in regards to animal welfare. Pack animal owners were mostly poor, illiterate and most of them were not aware of animal welfare issues and felt involved extra money in doing so. Further, they also felt that there is no extra benefit by following the improved welfare programmes. Study clearly indicated

the owner took care of minimum basic requirement of the animals. However, they exploited the animals to get maximum work which were against the government rules and regulations. Therefore, a more detailed in-depth study is needed regarding improving welfare issues in all varied pack animals, designing of scientific efficient carts, working hours and special requirements related to feed and other managerial practices for pack and draught animals.

Authors' contribution

PB and TD designed and carried out the research. PKB and RK helped to record data and carry out the research. MP and SS helped in analysis, drafting and revision of the manuscript. All authors read and approved the final manuscript.

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Competing interests

Authors declare that they have no competing interest.

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