

Full Length Research Paper

The neglected welfare statue of working donkeys in Ethiopia: The case of Dale district in Southern Ethiopia

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A cross sectional study was conducted on A total of 246 working donkeys from October 2015 to May 2016 with the objectives of assessing the welfare problem and harness related wound in dale district of Sidama Zone. The data were collected using direct (animal-based, using the hand tool) and indirect (owners resource-based, through questionnaire survey) methods. Indirect data was collected on the working management of donkeys whereas direct data was collected through observation of behavior (emotion and energy state), body condition score, wound, lameness and other signs of diseases. The qualitative behavior assessment (QBA) was employed to assess the behavior and communication of donkeys. The overall prevalence of wound occurrence was 43.1% whereas; prevalence of lameness was 22.7%. Majority of donkeys examined for emotional and energy state by QBA showed 39.8% with high-energy state, reflecting poor behavior and communication. The common sites of wound in donkey's were back sore, tail sore, chest wound, bit, girth and bite. From the total of 246 donkeys working, only 57 (23.1) were using improved harness. The occurrence of wounds was found to be statistically significantly associated with age ($P=0.000$) and use of improved harness ($P=0.002$). In conclusion, illiteracy and not using of improved harness contributed to the compromised welfare. Therefore, there should be massive awareness creation on animal welfare, sentient being and health management. There should be also significant endeavor at multiple stages; community, local service providers and policy level to improve the welfare statue of working donkeys in the area in particular and in the country in general.

Key words: Dale District, harness, welfare problems, working donkey, wound.

INTRODUCTION

Donkeys in Ethiopia have been used as a beast of burden for a long time and still render their valuable services (Pearson et al., 2001). Working donkeys play a fundamental role in human livelihoods through their direct and indirect contributions to financial, human and social capital. They are also important in communities' and households' socio-cultural lives, as they are often used in

celebrations and in supporting households in need by being lent and shared between families (The donkey sanctuary, 2017).

Despite the great contributions of donkeys in the daily life and livelihoods of people, who solely or partly depend on them, they suffer the negative impact of feed shortage, poor health, low social status and poor

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management (Feseha, 1997). The low level of development of the road transport network and the rough terrain of country makes the donkey the most valuable pack animal under the smallholder farming systems of Ethiopia (Birhan et al., 2014). Despite their use, the husbandry practice working equines especially of donkeys. The donkeys in Ethiopia are brutally treated, made to work overtime without adequate feed or health care indicating their poor welfare status (Pearson et al., 2003).

One of the major welfare problems in working animals are the use of inappropriate harness and working implements. The most frequent causes of harness sores in developing countries is modification or improvisation; a proven design has taken place without understanding the principles of traction or the function of each part of harness. A poorly designed or ill-fitted harness can cause inefficient transfer of power from the animal to the implement, fatigue, discomfort or injury to the animal (Hovell, 1998). A poor harness is one that injures the animal and/or hinders natural movement, breathing or blood circulation. When multiple hitches are used, it is generally assumed that the total animal energy available is less than the sum of components in the team (Bobobee, 2007). A properly designed, well-fitted and comfortable harness allows the working animals to pull the equipment to the best of its ability without risk of injuries (Wilson, 2007). The use of inappropriate harness is one of the major causes of welfare problems, leading to damage of skin and injuries.

The welfare of working donkeys is comprehensive, addressing the emotional need, physical need of the animal and naturalness of the animal. Even though, donkeys play vital role in the socio-economy of the local communities, there was limited information regarding donkey welfare status in the study area. Therefore, this study was designed with objectives of assessing the working management of owners and determines the prevalence of welfare problems and its potential causes.

MATERIALS AND METHODS

Study area

The study was conducted in Dale district, Sidama Zone, Southern Ethiopia. Sidama zone has geographic coordinates of latitude, 5°45' and 6°45' and longitude East 38° and 39°. It has total area of 10,000 km square of which 97.71% is covered with dry land where 2.29% is covered with water body.

Study population

The study population was donkeys and their owners in Dale district. The study animals were selected from 3487 donkeys' population in the district [The study animals were selected from 5 kebeles' (the smallest administrative unit) of Dale district. The total population of donkey owner's in Dale district was 1760 (The Dale district agricultural Office annual report, 2017)].

Study design

A cross sectional study design was followed to assess the welfare problems on working donkeys and management practices of owners. Observational assessment of donkeys and semi-structured pre-tested questionnaire interview were applied in this study. For observational study, welfare of working donkeys were assessed by "The hand Tool" (Galindo et al., 2018). The questionnaire survey was used to assess the common health problems during the last one-year period and to investigate working management. The emotional state of donkeys and the way how owners communicate with them were assessed by qualitative behavior assessment (QBA) in four levels. The QBA tool measures the emotional state and energy level of a donkey in resting condition. It has four out results; positive high energy, positive low energy, negative high energy and negative low energy according to Wemelsfelder et al. (2009).

Sample size and sampling

Random sampling was followed and the sample size was determined on the bases of the 80% prevalence (Donkey sanctuary Hawassa project, annual report, 2014). Accordingly, the sample size was cut to be 246 (Thrusfield, 2007). For interview purpose, 10% of the total donkey owners in the district and 176 donkey owners, were engaged in the study. The desired absolute precision at confidence level of 95% was used.

Ethical clearance

The study was an observational study and no animal and human were subjected to suffer as a result of this study.

Data analysis

The data collected was stored in the Microsoft-Excel Spread Sheet and analyzed using SPSS Version 20. Descriptive statistics was used to summarize the data. Pearson's Chi-square test was used to check the association between variables. P-value less than 0.05 at 95% confidence level was considered in interpreting the results. The odds value calculation was applied to assess the risk ratio.

RESULTS

Respondent's characteristics

The respondent were 144 male and 32 were female from 176 owners. From 176 donkey owner, 151 (85.6%) were owners, 22 (12.5%) rented the donkeys working for their own and 3 (1.7%) were daily labors hired to work for the owners. 134 (76.1%) of the respondents were in age group of 40 to 60 years old. In terms of educational status, illiterate and elementary school attendees were 78 (44.3%) and 68 (38.6%), respectively. Majority of owners, 135 (76.7%), had working experiences of more than 2 years of working on donkeys. The ownership of donkeys were 114 (64.6%) having one donkey, 56 (31.8%) having two donkeys and 6(3.6%) having 3 and more donkeys at house hold level.

Table 1. The welfare condition of working donkeys from September 2017 to April, 2018, in Dale district, Ethiopia.

Description of welfare problems	Frequency	Prevalence (%)
Wound types		
Back sore	64	26
Tail sore	2	0.8
Chest wound	4	1.6
Bit	1	0.4
Girth	6	2.4
Bite	12	4.9
Back and tail	6	2.4
Back and bite	9	3.7
Back and bit	5	2.0
Total	109	43.1%
Behavior and communication		
Positive high energy	122	49.6
Positive low energy	83	33.7
Negative high energy	26	10.6
Negative low energy	15	6.1
Lameness and movement		
Hoof	42	17.1
Joint	7	2.8
Long bone	7	2.8
Total	56	22.7
Other sign of injury		
Respiratory problems	4	1.6
Signs of colic	2	0.8
Emaciation	12	4.9
Depression	33	13.4
Total	51	20.7

Results of questionnaire survey

Common health problems and treatment options

From questionnaire survey, commonly encountered health problems according to owners claims in working donkeys were weight loss, colic and respiratory diseases at prevalence of 39 (22.2%), 7 (4%) and 7 (4%), respectively. As treatment options, most of owners, 86 (48.9%), visits veterinary clinic, 12 (6.8%) seek traditional remedies and 23 (13.1%) left them untreated.

Working management

The donkeys in the study area were working over loaded and over time. On average, a donkey was working per day for 4 to 8 h (101, 57.4%) and working for 8-10 h

duration per day (60, 34.1%). The majority of load carried at a time was above the capacity of the animal, taking the assumption that a donkey should carry one third on its pack or a triple of its body weight if pulling in cart (The Donkey Sanctuary Ethiopia, annual report, 2017). Regarding awareness of donkey welfare, 81 (46%) did not have awareness whereas, 95 (54%), had no information on the use of improved harness and harnessing of donkeys. Only 37 (21%) of the owners had been using improved harness (Table 1).

Results of observational study

Behavior and communication

The behavior of donkeys and the way the owners were communicating with them were assessed in terms of the

Table 2. The association of risk factors with wound occurrence, from September 2017 to April, 2018, Dale district, Ethiopia.

Variables	Number of donkeys examined	Number of positive	Percentage (%)	χ^2	P – Value
Work type					
Cart	85	34	40	0.506	0.283
Pack	161	72	44.7		
Body condition score					
Very poor	27	19	70.4	26.372	0.000
Poor	163	78	47.9		
Medium	56	9	16.1		
Age groups					
5-7 years	119	2	43.1	1.8327	0.000
7-10 years	47	26			
Harnessing conditions					
Using improved harness	57	15	26.3	8.512	0.002
Not using improved harness	189	91	48.1		

apparent feeling of the donkey and its energy status by observing the animal at rest. Accordingly, the results of behavior and communication of donkeys were found to be; positive and had high energy (122, 49.6%), positive and low energy (83, 33.7%), negative and high energy (26, 10.6%), and negative low energy (15, 6.1%) (Table 1).

Body condition score

Body condition is one of the pillars for measurements of donkeys' welfare. The finding shown from 161 pack donkeys indicated that 22 (13.7%), 88 (54.7%) and 51 (31.7) were having poor, medium and good body condition scores, respectively. From 85 cart donkeys, 2 (2.4%), 60 (70.6%) and 23 (27.1%) had poor, medium and good body condition scores, respectively (Table 1). The work type and body condition of working donkeys were found to be statistically significantly associated with the occurrence of wound (Table 2).

Prevalence of wound

The overall prevalence of wound was 43.1%. There was a statistically significant difference in the prevalence of wound among different age groups ($P=0.000$) and body condition scores ($P=0.000$). Pack donkeys experienced higher wound occurrences as compared to cart donkeys, but it was not statistically significant ($P>0.05$). The occurrence of wound was found to be statistically significantly associated with use of improved

harness ($P= 0.002$) (Table 2). The donkeys not using improved harness were at greater risk of having wound (48.1%) than those using improved harness (26.3%). The odds of wound occurrence in donkeys not using improved harness were 8.862.

Most common sites of wound occurrence in the donkeys were back sore, 64 (26%); tail sore, 2 (0.8%); chest wound 4 (1.6%); bit, 1 (0.4%); girth 6 (2.4%); bite 12 (4.9%), combined wounds on back and tail 6 (2.4%), combined wound of back and bite 9(3.7%), combined wound of back and bit 5(2.0%).

Prevalence of lameness

The prevalence of lameness in working donkeys was found to be 56 (22.7%). The common type of lameness were hoof problems 42 (17.1%), joint problems 7 (2.8%) and long bones problem 7 (2.8%).

Other signs of diseases

The common health problems and abnormalities in working donkeys were depression, 33 (13.4%); emaciation, 12 (4.9%); signs of colic, 2 (0.8%) and respiratory problems 4, (1.6%) (Table 1).

DISCUSSION

The current study revealed that all donkeys were working in either pack or cart. The behavior and emotional state

of working donkey in this study disclosed 39.8% with high energy. This finding shows that the donkeys are not in friendly situation with their environment, and in poor communication with their owners. This might be due to poor understanding of the behavior of the donkeys by the owners, poor understanding of the animal welfare issues and in appropriate working management.

The overall prevalence of wound occurrence was 43.1%, which is lower than the report of Herago et al. (2015), in Wolaita Soddo (58.6%). The present finding is also lower than that reported by Burn et al. (2009), in Jordan (59%). Furthermore, the result of current study is markedly lower than the previous report of 77.5 and 79.4% by Curran et al. (2005) and Biffa and Woldemeskel (2006), respectively in Ethiopia. The variation in occurrence of wound in working donkeys could be due to the difference in working conditions, donkey owner's literacy level and age and seasonal factors (Pearson et al., 2003).

The common sites of wound occurrence in this study were back sore, tail sore, chest wound, bit, girth, bite, back and tail, back and bite and back and bit. This wound may be caused by a combination of multi-factorial reasons associated with management and type of harness material (natural or synthetic) and harnessing (Pearson et al., 2003).

The finding of prevalence of lameness (22.7%), was greater than that of 21.8% reported Herago et al. (2015). It is also higher than the report of Kumar et al. (2014), in Mekelle city (18.2%) whereas, the finding of current study is lower than that reported by Sameeh et al. (2014) (32.2%) in Jordan. This might be due to working condition; overloading and lack of hoof care and continuous movement in various landscapes and working on rough roads.

On this study, there was a statistically significant difference in the prevalence of wound among different age groups and body condition scores. Concerning work type higher prevalence of wound was observed in pack donkey than cart donkeys. This finding is probably due to the fact that, donkeys with a poor body condition score might have less natural padding, which could be protecting them from pressure, friction and shear lesions caused by saddle. But, the finding of the current study is not in agreement to the reports from morocco by Sells et al. (2010).

Majority of respondents (48.9%), were seeking veterinary service and 13.1% were left untreated, which is in agreement with the reports of Herago et al. (2015) and disagreed with those of Kumar et al. (2014). This difference might be due to owner economic status, knowledge on donkey welfare issues as well as literacy of owners.

Conclusions

The working donkeys in the present study area were

experiencing multiple welfare problems and the major constraints that contribute for poor treatment include that most donkey owners were in lower economic status and the donkey owners mainly depend on donkeys for their livelihood. The illiteracy of majority of people working with donkeys and not using of improved harness and harnessing contributed to the compromised welfare of donkeys in the area. Therefore, there should be massive awareness creation on animal welfare, sentient being of animals and health management to the people working with donkeys and the general public. There should be significant endeavor at multiple stages; community, local service providers and policy level to improve the neglected welfare status of working donkeys in the area in particular and in the country in general.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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