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The Impact of Carrying Heavy Loads on the Donkeys Health in Benadir Region Somalia

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ABSTRACT

Background
The number of donkeys worldwide has increased from 37 million in 1961 to an estimated 44 million. However, they are not distributed evenly; the bulk of them reside in semi-arid and hilly areas. Most donkeys kept around the world are only utilized for work or transportation.

Study
A descriptive design was used to perform the study. This method was employed by the researcher to describe and examine the effects of carrying big loads on the health of donkeys in the Mogadishu, Somalia, Deynile neighborhood.

Objectives
The major goal of this study was to determine how large loads of donkeys affected their health in the Benadir region of Somalia.

Results
The study's results showed that 160 (80%) of the respondents let the donkeys rest when they were ill, while 40 (20%) of the respondents did not let the majority of the respondents rest. According to the results of the current survey, 188 respondents (94%) believe that a donkey may experience pain, whereas 12 respondents (6%) disagree. This study found that the majority of donkeys do not have shelter at night, with 38 (19%) of respondents stating as much. These results also showed that the owners observed 146 (73%) lesions involving hair loss and 54 (27%) lesions involving minor abrasions in their heavily laden donkeys. The results of the current study also suggest that using donkeys to haul high loads is bad for their health. Out of 158 owners 80% strongly disagreed and out of 12 owners 6% strongly agreed and out of 6 owners 3% agreed.

Conclusion
According to the current study, donkeys who pull carts in and around the Banadir region of Somalia experience health problems as a result of carrying heavy loads. Health and welfare are complicated issues that we are addressing. The main causes of health and welfare problems included poorly made wooden carts, a lack of standards for harnessing equipment, an unapproved policy regarding working animals, a lack of knowledge regarding animal welfare, relying on cart work as a primary source of income, overloading, overworking, and work types.

Recommendation
The findings of this study strongly advise the Ministry of Livestock to create laws and rules governing donkey maintenance, health, and load-carrying capacity.

Keywords
Animal welfare; Heavy load; Donkey; Lesion; Laceration; Shelter; Benadir Region Somalia.

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INTRODUCTION

Background of the Study

Over 95% of the donkeys in the world are likely kept for work-related purposes. Transport is their primary function, whether they are pulling carts, riding in vehicles, or both. They could also be towed on farms. In other nations, they might help with milling, threshing, or other processes. Different nations have different frowning and working animal systems. Donkeys can be owned and utilized by both men and women in the majority of countries. Donkey care is commonly entrusted to children. It is conceivable, however, donkey milking is not a particularly widespread practice.

Some nations, particularly Italy, may value the meat of donkeys. Numerous animals, including donkeys, may be kept in high numbers in some communities as a sign of wealth and social standing. Feral donkeys are found in some nations in tiny numbers. Donkeys are kept expressly for entertainment, breeding, displaying, or companionship in some developed nations. Donkeys are kept by some farmers to protect their sheep. However, these specialized applications only engage a very limited number of people on a global scale. Estimates of national and regional donkey populations serve as good indicators of donkey work globally because donkeys are rarely kept and owned unless they are employed. We cannot determine the lifespan or frequency of usage of donkeys using population information as a whole. However, population shifts can reveal important information about the current state of affairs and potential trends when they are understood in light of the prevailing systems of utilization.[1]

Over 4000-years ago, donkeys were primarily used for ploughing, packing, and transporting. Their lifespan ranges from 9 to 13-years, and their coat colors and body sizes vary according to where they reside. Although donkeys play an essential role in the socio-economic life of many smallholder agricultural systems and their families, little attention has been paid to them despite their presence in different ecological zones around the world. Donkeys have superior draught capabilities compared to other draught animals. In many parts of the world, donkeys are an underutilized source of energy.[2]

The number of donkeys or asses worldwide is over 44 million, with the majority living in developing nations.[3] Mules, which are produced by breeding a male donkey (called a jack) with a female horse (called a mare), are produced in numbers of about 15 million.

Equus asinus, a large domestic animal, serves as a reliable source of protein and a medium of transportation for many human societies. Nevertheless, it is still unclear how the Chinese donkey was domesticated and how it spread because there are not many donkeys remaining in the archaeological record and they are sometimes mistaken for horse remnants.[4]

Due to the possibility that many domestication events took place in one region, northeast Africa, as well as the fact that little is known about the process of domesticating transport animals, this species is particularly intriguing.[5,6] Early pastoral civilizations and ancient empires were drastically altered when donkeys have domesticated some 6,000-years ago. Donkeys are sturdy, desert-adapted animals that made it possible for pastoralists to travel farther and more frequently as well as move their houses along with their herds. Domestication of the donkey also allowed large-scale food redistribution in the nascent Egyptian state and expanded overland trade in Africa and western Asia. Today donkeys and mules are essential for transport in arid, rugged, and poorer regions of the globe.[7]

Additionally, the domestication of the donkey facilitated extensive food redistribution in the fledgling Egyptian state and increased overland trade in western Asia and Africa. In today's desert, mountainous, and poorer parts of the world, donkeys, and mules are necessary for transportation.[7]

Donkeys are mostly used for transportation, whether it be for briding, dragging a pack, or pulling a cart. They may also be used for agriculture tillage. The vast majority of donkeys kept worldwide are employed only for labor. They might help with threshing, raising water, milling, or other tasks in some regions.[1] Donkeys were extremely important in ancient agriculture and transportation, especially in dry and semiarid areas.[8] Donkeys have been overworked and undernourished despite the fact that they are so important, as the majority of their owners are impoverished and resource-constrained and rely on these animals for their livelihood.[9]

The main causes of injuries on the back of donkeys are overloading and being overweight; donkeys are typically much more affected than horses and mules. It is widely believed that donkeys are tolerant of difficult conditions, able to travel up to 70 km/day while carrying an average weight load, and capable of transporting heavy loads over great distances for extended periods of time of 150 kg. Traditional wooden or iron saddles are repeatedly pressed against the back, causing pain and damage over time. They are securely secured to the body with a plastic rope.[10]

Given their adaptability, donkeys can be utilized for a wide range of purposes, including as pets, light-draught animals, driving and show animals, and even as companions. They are a lot of joy to get to know and care for, are lots of personalities, and are both. An average donkey, standing 11 hands tall and weighing 160 kg, can pull a load twice as heavy as its own body weight and carry up to 50 kg (8 stone) on its back. Donkeys in the UK live an average of 27-years, but they can live for over 40-years, so it is important to realize that owning a donkey is a long-term commitment before getting one. Physically, cognitively, and emotionally distinct from one other are horses and donkeys. Donkeys behave more stoically and startle less frequently than horses. In unfamiliar environments, donkeys display less fear than horses do, which can be mistaken for stubbornness instead of dread. Training a donkey requires a different mindset than training a horse because a donkey cannot be made to do something they do not want to. Donkeys are exceptionally social animals who enjoy the company of others and form strong emotional relationships with them. Because of this, it is not advised to keep donkeys alone. From 1949 to 1996, there were 8.5 million donkeys in Africa; today there are 13.7 million. Donkeys currently have a working life expectancy of 4 to 6-years, but usage, mistreatment, and a lack of veterinary care have all greatly increased the rate of early death. However, donkeys can live up to 30-years in nations where animal

compassion is actually practiced.[11]

While donkeys offer a number of benefits, their health and well-being head load are a visible issue, and the majority of their owners are not even aware of animal welfare and management techniques, which causes the animals to endure great pain as a result of poor husbandry methods. Studies that clarify the scope of the issue are lacking. Designing methods to enhance the health and welfare of donkeys might benefit from having access to such information.

In Somalia, one of the most tamed donkey-owning countries in Africa, there are no research published on this topic and difficulties for donkeys carrying high burdens. There is no Somalian authority in charge of regulating donkey health issues because there are so many donkeys carrying large loads and dealing with multiple issues that endanger their life. This study aims to end the use of donkeys for large loads in Somalia and enhance the welfare of the workforce. Programs for community education that are relevant to their donkeys should be offered often. Working horses, especially donkeys, are poorly cared for despite their use. Unlike horses, donkeys do not receive feed additives. Lack of food and illness are the two main issues affecting the output and performance of horses at work.

Problem Statement

Due to the widespread misconception that donkeys are able to withstand harsh conditions, can transport heavy loads over long distances for longer periods of time, and can travel up to 70 km per day while pulling an average weight load of 150 kg, donkeys are frequently much more affected than horses and mules. Donkeys' back issues are primarily brought on by overloading and being overweight. Traditional wooden or iron saddles are repeatedly pressed against the back, causing pain and damage over time. They are securely secured to the body with a plastic rope.[10]

There is a dearth of knowledge regarding the economic significance, proportion, and potential risk factors in Somalia. The effects of carrying high loads are a common and widely dispersed problem of the health and well-being of working donkeys in all parts of Somalia.

Due to the lack of archaeological evidence, it is challenging to recreate the early history of the donkey in Africa. In sub-Saharan Africa, draught animals—most notably donkeys—play a significant role in agricultural productivity and transportation. Tractors have replaced draught animal power on many big commercial farms in Africa, but for economic and agroecological reasons, it is still an important agricultural technique in small-scale agriculture.[12]

Many farm households in Africa depend on donkeys to transport their crops to houses and marketplaces.[2] These donkeys lighten headload transportation and reduce the time needed for women to find food and water. Particularly in landlocked places or when the roads are unsuitable for automotive travel, they aid local traders in getting their items to adjacent markets for sale. Donkeys are preferred as draught and transport animals over horses and oxen because they are kind, hardy, quiet, and more affordable. They are simple to teach, intelligent, and patient while working, and they can be kept on produce from nearby farms.[13] As pack animals, donkeys can carry loads up to 100 kg, or 50% of their body weight.[14] Additionally, donkeys are reportedly capable of carrying twice as much weight as a person can over longer distances.[15] With 5.2 million donkeys, Ethiopia has the second-largest donkey population in the world behind China. Ethiopia also holds the top spot in Africa with more than 40% of the continent's donkey population.[16] In the agriculture sector, there is one horse for every four persons in Ethiopia. In regions with a dearth of oxen available for ploughing in the upland section of the country road, donkeys have been used as an alternative kind of animal power in farming systems.[17] The main cause of injuries on the back of donkeys due to overloading and overweight is loading without sufficient cushioning and overloading for an extended period of time. The primary problem that needs to be resolved at the moment is that there is no ethical way to care for donkeys in Somalia.

Since donkeys are domesticated and used for transportation in Somalia, the major goal of this study is to examine, identify, and quantify the characteristics that are related to their use for hauling large loads.

OBJECTIVES OF THE STUDY

General Objectives

To identify the impact of carrying heavy loads on the donkeys of Health in Banadir region Somalia.

Specific Objectives

To investigate the impact of the back wound on carrying heavily loaded donkeys in Banadir region, Somalia.To identify the feeding nutrition of carrying heavily loaded donkeys in Banadir region, Somalia. To estimate the significance of harnesses in carrying heavily loaded donkeys in the Banadir region, Somalia.

Study Area

The importance of this study lies in its capacity to shed light on the effects of carrying heavy loads on donkeys and related factors that can be used to ensure the longevity of the animals, prevent problems from occurring to the animals and raise awareness of the health issues that can arise from doing so. This reach will also help future researchers and serve as a source of data on the well-being of laden animals.

MATERIALS AND METHODS

Study Area

Mogadishu also referred to as "Hamar", is the capital and biggest city in Somalia. On the Horn of Africa's coast, in the Banadir Region, a dry region with a hot, semi-arid environment, is where it is located. The estimated population is 2.5 million, and the average annual temperature is 27 °C. Seventeen (17) districts serve as the

administrative divisions of Mogadishu.

Research Design

The study's descriptive design was used to carry it out. This method was utilized by the researcher to describe and examine the effects that large loads had on the health of the donkeys in the Deynile, Howlwadaag, and Kaaraan areas of Mogadishu, Somalia. utilizing the data from the questionnaire. The target group will find this mode of data collection to be effective, inexpensive, and practical for this project.

Research Population

The donkey laborers in Mogadishu, Somalia, who work in several regions are the study's target demographic.

Sample Size

The sample size of the study was determined by using Slovene's formula for sample-size determination: Where:

$$n: \frac{N}{(1+ N (e)^2)} = \frac{400}{1+ 1(400)^2)} = 200$$

Therefore, the sample size of the study was 200 respondents

Sample Procedure

The study used probability random sampling, in which each member of the population under investigation has an equal chance of being chosen to be a member of the sample.

Research Instrument

A questionnaire was an effective tool for gathering information that could be easily described in writing. Questionnaires are regarded as suitable for gathering such information. It is a quick and efficient method for acquiring plenty of data.

Data Collection Method

Before the administration of the questionnaire, during the administration of the questionnaire, and after the administration of the questionnaire, three sequences of data-gathering methods were put into place. The faculty of veterinary medicine and animal husbandry at Somali National University provided the researchers with an authority letter authorizing them to conduct the research project. The researchers then started by distributing questionnaires to the population and assisting the respondents as they provided information during data collection. The respondents were also asked to give their informed consent, to answer all of the questions and not leave any unanswered, to prevent biases, and to be objective in their responses.

Data Analysis

Statistical package for the social sciences (SPSS), a statistical tool for social research, was used to examine the data. The analysis was descriptive. Following the collection of the respondents' questionnaires, the researchers used the quantitative approach to evaluate and interpret the data. In this study, the researcher used the Statistical Package for Social Science to evaluate the questionnaire results using frequency and percentage.

Limitation of Study

The hesitation of the respondents to respond to the research questions was one of the difficulties the researchers ran across. The country's situation also presented security challenges for the researchers, and as some respondents may have never seen a researcher before, they might have doubts about the validity of your questionnaires.

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION OF FINDINGS

Introduction

In this chapter, the data analysis and its interpretation were provided. Frequency tables and charts were used for descriptive analysis (Table 1).

DISCUSSION

There were 200 respondents in all, 176 (88.2%) of whom were men, and 34 (11.8%) of whom were women (responses by sex). As a result, men provided the bulk of responses. The results demonstrate that 164 respondents (82.4%) were married, while only 36 (17.6%) of them were single. The great majority of survey participants are married. According to the current study, 188 respondents (94.12%) did not have a formal education, with 12 (5.88%) of them only receiving primary education. The vast majority of responders lack formal education or access to it.

Only 5 (2.5% of the respondents) indicated they did not own a donkey, while 195 (97.5%) said they used one. This demonstrates that donkey ownership was the norm among respondents. This study also demonstrates that the majority of respondents utilize donkeys for transportation and packing, which is consistent with earlier studies by Usman et al,[18] Solomon et al,[19] and Pritchard et al[20] that found that equids are mostly used for transportation. According to the results of the current survey, 160 (80%) of the respondents gave their donkeys permission to rest when they were ill, while 40 (20%) did not.

According to this study, 188 (94%) of the respondents hold the opinion that a donkey may experience pain, whereas only 12 (6%) of the respondents hold the opposite opinion. According to this study, 162 (81%) of the respondents who kept donkeys had a place to live. This result surpasses that of the survey conducted by Amante et al,[21] change which discovered that 76.6% of families had Equine.

In the current study, 146 respondents (73%) reported seeing lesions in heavily loaded donkeys that caused hair loss, whereas 54 respondents (27%) reported seeing lesions that caused

Table 1. *Objective two: Questions*

Responses	Frequency	Percent (%)	Cumulative %
Gender			
Male	176	88	88
Female	200	100	100
Age			
18-25	30	15	15
26-30	170	85	100
Marital status			
Single	36	18	18
Marred	164	82	100
Educational level			
No Formal Education	188	94	94
Primary	12	6	100
Do you have a donkey?			
Yes	195	97.5	97.5
No	5	2.5	100
What do you use your donkey?			
Transportation	11	5.5	5.5
For Pack	189	94.5	100
Do you let the donkey rest when it is sick?			
Yes	40	20	20
No	160	80	100
Do you think that a donkey can feel pain?			
Yes	188	94	94
No	12	6	100
Does the donkey have shelter at night?			
Yes	162	81	81
No	38	19	100
Signs are seen the donkeys with heavy loads			
Yes	162	81	81
No	38	19	100
The below signs were seen the donkeys with heavy loads			
Lesion involving hair loss	146	73	73
Lesion involving a minor laceration	54	27	100
The impact of carrying heavy loads of donkey is good for health?			
Strong Disagree	158	79	79
Neutral	24	12	91
Strong agree	12	6	97
Disagree	6	3	100
Do All owners provided their donkeys with water during the day?			
They do	125	62.5	62.5
They don't	75	37.5	100
Do you trim the hooves of the donkey?			
Yes	7	3.5	3.5
No	193	96.5	100
Do you take your donkey to Veterinary Clinic?			
Yes	24	12	12
No	176	88	100
The most common treatment of sick donkeys in Somalia is a traditional remedies			
True	171	85.5	85.5
False	29	14.5	100

Continue...

...Continued

Why do the owners hit their donkeys when they do not work?			
They do not aware the pain of the donkey	48	24	24
To move quickly	152	76	100
The bad coat, skin condition, lesions and eye abnormalities are the most prevalent problems overloaded donkeys			
Strong agree	31	15.5	15.5
Strong disagree	169	84.5	100
The majority of the donkeys had lesions that were caused by the equipment and harnessing			
Strong agree	24	12	12
Strong disagree	176	88	100
The posture of an overloaded donkey is different from other donkeys			
Strong disagree	22	11	11
Disagree	18	9	20
Neutral	34	17	37
Strong agree	36	18	55
Agree	90	45	100
Donkeys are of great importance for the community in Somalia and many people are dependent on their donkeys to earn their livelihood			
Strong agree	146	73	73
Neutral	34	17	90
Strong disagree	20	10	100
How can we prevented overloaded donkeys?			
Public education	188	94	94
Arresting	12	6	100

small lacerations. In this study, 158 respondents (80%) strongly disagreed with the claim that donkeys carrying big burdens are healthy for their health, whereas 24 respondents (12%) expressed neutrality, 12 respondents (6%) expressed strong agreement, and just 6 respondents (3%) disagreed. This research supports findings from earlier studies by Panwar et al[22] and Biswas et al[23] which concluded that donkeys should not carry big burdens for their health.

According to the current study, 125 respondents (62.5%), on average, give the donkeys water during the day, while 75 respondents (37.5%), do not. The study also reveals that 193 owners, or 96.5%, trim their donkeys' hooves, with only 7 respondents (or 3.5%), not doing so. According to this poll, 24 respondents (12%) take their donkeys to the vet when they are ill, but 176 respondents (88%) do not bring them in when they are healthy. Traditional medicines are the most frequently used form of treatment for sick donkeys, according to the poll, which found that 171 respondents (85.5%) said they gave traditional treatments a try while 29 respondents (14.5%) said they did not. According to responses from 155 (77.5%), 25(12.5%), 13(6.5%), and 7(3.5%) donkey owners, the most common treatment performed when the donkeys stopped grazing was to burn the animal with a hot iron in the mouth, beneath the lip or tongue, behind the ear, or on the cheek.

According to the owners' responses in this study, the most common issues with loaded donkeys were bad coat and skin condition, lesions, and eye anomalies (169 owners strongly agreed, 31 disagreed). One hundred seventy-six (176) responders (88%) strongly disagreed with the statement that equipment and harnessing were the cause of the prevalent lesions in donkeys.

According to responses from owners, the current study showed that an overloaded donkey's posture is similar to that of other donkeys. 90 (44%) were extremely opposed, followed by 34 (17%), 36 (18%), neutral, and 18 (9%), firmly in agreement.

This study demonstrates the critical role that donkeys play in the community and the extent to which many people rely on them for a living. Of the 146 respondents, 73% strongly agreed, 17% were neutral, and 10% strongly disagreed with the study's findings. This result is consistent with a previous study by Geiger[24] who discovered that donkeys give their owners greater independence, status, employment opportunities, and opportunities for enjoyment.

According to respondents' responses in this survey, 188 (94%) and 12 (6%), respectively, overloaded donkeys can prevent public education and experiences and arrest donkey workers.

CONCLUSION

A recent study suggests that the hefty loads that donkeys pull carts in and around the Banadir region of Somalia might lead to health issues. Researchers are looking at complex issues related to health and welfare.

Poorly constructed wooden carts, a lack of standards for harnessing equipment, an unapproved working animal policy, a lack of knowledge regarding animal welfare, dependence on cart work

as a daily source of income, overloading, overworking, and work types were the main causes of health and welfare issues. Abrasion, laceration, puncture, and incision were the wound types found in this analysis. Back sores, wither sores, mouth-commissure sores, tail/tail base sores, ribs/flank sores, chest sores, and girth/belly sores were the most typical injuries discovered on working donkeys. Additionally, assessed was the distribution of lesions across various body regions. In this study area, dental issues, skin issues, various sickness symptoms, and lameness issues regularly had an impact on donkey health. Donkey hydration, housing quality, feeding administration, and animal health care received less focus, which highlighted how little this study community knew about the welfare and health of animals. Given these facts, it is crucial that authorities and non-profit groups that care about animal welfare spread the information about it.

Additionally, the nation should have a proactive program for handling and overseeing working animals. There should be standardized harnessing equipment on the market. All donkeys that pull carts must also utilize the donkey sanctuary model carts.

RECOMMENDATION

This study recommends that the Minster of Livestock should draft laws and regulations on donkey welfare, health, and load-carrying capacity, according to the findings of this study.

Animal welfare should be adopted by animal owners To increase awareness of heavy-loaded donkeys and to encourage their use.

The study also encourages academics and researchers to develop convenient ways to transport loads on donkeys to prevent heavy loads.

To end the devastating issue faced by working animals, animal owners, animal welfare organizations, and other relevant parties should cooperate closely together to improve education, extension, and awareness of animal welfare initiatives.

ETHICS APPROVAL

The researchers thought about the ethical issues throughout the research project and kept the privacy and confidentiality of the respondents from the public. The Somalia national university Ethics Committee (1.02.2022-SNU /11/39) approved this study.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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