

## Animal Welfare: Road Traffic Accidents and Animals Loss, Khartoum State, Sudan

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### ARTICLE INFO

#### ARTICLE HISTORY

Received: 5/01/2019

Accepted: 20/04/2019

Available online: June 2019

#### KEYWORDS:

Car accidents,  
Animal welfare,  
season,  
environment.

### ABSTRACT

This research aimed at highlighting on domesticated animals collisions with cars and its impacts on animals' biological responses, welfare (AW) and environment. As many animals suffer from Traffic Road Accidents (RTAs), surveillance was done across the streets in 2016-2017 during summer and winter seasons in some localities of Khartoum State (Khartoum and Bahri). Pictures of different species of animals suffered from death or loss of function due to RTAs were taken. Stray dogs and cats represented the majority of dead animals found in the streets in addition to some livestock and traction animals. Road Traffic Accidents (RTAs) happen mainly in high ways, compared to other roads, during night or at dawn and their high incidence was observed during winter season. Animals exposed to RTAs experience different biological responses as fear, anxiety and pain which are reflected in mental, physiological and behavioral changes that alter their welfare. Road Traffic Accidents (RTAs) have great environmental and economical impacts, as dead animals are left in the streets causing pollution that affects health conditions. On the other hand, survived ones remain handicapped and became abandoned by their owners if they did not respond to medical treatment. It is concluded that RTAs are one of the serious conditions that many animals face and authorities should take care of by applying countermeasures. Also they have great impacts on animals' biological responses and their welfare, public health and economics.

### INTRODUCTION

Animal welfare (AW) is defined as how an animal is coping with

conditions in which it lives. It is regarded as a good state of welfare if the animal is healthy,

comfortable, well nourished, safe, able to express innate behavior and it is not suffering from fear, and distress (Khan, 2007, Yeates, 2013). The OIE defined stray dog as free – roaming with no owner or free-roaming owned dog not under direct control or restriction at particular time(OIE,2009).

In Islamic Religion dealing with animals kindly and giving them their rights is part of the Islamic Teachings and Ethics. In Sudan , as AW is a growing area of national, regional and international interest Animal Welfare Act was issued in 2015 (Mohammed, 2015). However, inadequate welfare policy, education, training capacity building and the lack of implementation framework have limited implementation of OIE animal welfare policies (OIE, 2010). Recently, The National Animal Welfare Strategy and Action Plan (2017-2022) were designed by the Federal Republic of Sudan to focus on all sentient animals in Sudan (IGAD, 2017). Road traffic accidents (RTAs) are one of the disasters that wild and companion animals, livestock, and working animals suffer from. Unfortunately RTAs and their consequences are not included neither in the Animal Welfare Act issued in Sudan by The National Council nor in The National Animal Welfare Strategy and Action Plan (IGAD, 2017). There are countermeasures applied worldwide to prevent vehicles colliding with domestic and wild animals (Fazzalero, 2004) Animal exposed to RTAs are subjected to fear and anxiety

which are accompanied by physiological and behavioral changes. Fear and anxiety act as signals of danger, threat, or motivational conflict, and to trigger appropriate adaptive responses [\(Steimer, 2002\)](#). Anxiety is a generalized response to an unknown threat or internal conflict, whereas fear is focused on known external danger (Craig *et al.*, 1995). Animals may learn to fear situations when they have previously been exposed to pain or stress, and subsequently show avoidance behavior when they reencounter that situation.

Ethologists define fear as a motivational state aroused by specific stimuli that give rise to defensive behavior or escape from the source of danger (McFarland, 1987). Moreover, it is expected that part of the fear-mediating mechanisms elaborated during evolution to protect the individual from an immediate danger have been somehow “recycled” to develop the sophisticated systems required to protect animals from more distant or virtual threats [\(Steimer, 2002\)](#)

The adaptive and defensive behaviors to fear and anxiety depend on the context and the repertoire of the species and specific brain circuits appear to mediate distinct coping reactions to different types of stressors (Bandler *et al.*, 2000, Keay *et al.*, 2001) . Active coping strategies are used when escape from threat is possible, and the autonomic changes associated with these active

strategies are mediated predominantly by sympathetic activation (hypertension, tachycardia). This is the fight-or-flight response was originally described by Cannon (1915). Passive coping strategies, such as immobilization or freezing, are usually elicited when threat is inescapable, and are usually characterized by autonomic inhibition (hypotension, bradycardia), and a more pronounced increase in the neuroendocrine response (activation of the hypothalamopituitary-adrenal axis and increased glucocorticoids secretion). This type of passive response was originally described as a conservation-withdrawal strategy (Engel and Schmale, 1972). The concept of alternative (active/passive) strategies are described by Henry *et al.* (1997), animals survived RTAs for a while before death or after, experience pain and those who startled experience emotional distress (Blanchard and Hickling, 2003). Noiception is the physiological response to painful stimuli and an intact cortex is required for the full extent of suffering (Grandin and Dessing, 2002). Vehicles' drivers are not aware of the consequences of animals hitting to be more careful during driving. Moreover, they

do not report when they commit RTAs, as there is no clear law that forces them to do. Accordingly, stray dogs and cats bodies are left until they are crushed or left to rot a side. However, the owners of cars killed cows, sheep, horses and donkeys report to police for compensation. Some treated animals may lose their fitness afterwards and became abandoned. For the working animals their owners lose source of income.

The objectives of this work tended to focus on RTAs and draw attention to their effects on animals' rights under the umbrella of AW.

## **MATERIALS AND METHODS**

Surveillance was done in some Khartoum State streets (Khartoum and Bahri localities) for RTAs during summer and winter in 2016-2017. Pictures of dead or affected dogs, cats and other species of animals were taken. Number of cases was not recorded as the aim of the study is only to highlight on the importance of RTAs.

## **RESULTS AND DISCUSSION**

It was clear that high way roads have plenty of dog bodies either recently hit not crushed by other vehicles or already hit and crushed with internal organs outside their bodies or only their remnants left (Figure 1).



**Figure 1: Dead dogs bodies and bloody roads.**

Similarly cats bodies or their crushed parts were found in the road due RTAs (Figure 2).



**Figure 2: hit and crushed cats bodies, RTAs**

Road traffic accidents (RTAs) could be attributed to the movement time of stray animals and the absence of close supervision compared to domesticated ones. Stray animals' active times are mostly during dusk and night, when they usually seek for shelters to calm and sleep and at dawn when they start to move looking for food and water from restaurants garbage's across the streets.

Moreover, during the mating seasons they wander and cross roads looking for their mates. In winter some of these animals may decide to move from one place to another at night looking for other warm places where probably they have to cross different roads and face death.

Other RTAs killed domesticated animals' bodies were found, a dead she-donkey with its ass



standing by , different cows bodies left by the road and in the road in addition to a horse hit by a car was left in the street with

wounded neck , it was brought to the TVH where it received medical care (Figure 3).



**Figure 3: Different animals' bodies found in the streets due to RTAs**

Vehicles drivers commitment of animals killing may happen accidentally due to lack of streets' lights, high speed or if they are drunken while going back home. Also they may do it when animals hesitate during crossing the road. The collision sound or animals' cry of pain will never stop them thus reflecting a picture of cruelty and inhumanity. Drivers do not know or may underestimate the effects of animals exposure to

fear, anxiety and pain on their physiological responses. Fear stress is highly aversive and subjecting an animal to intense fear stress increases cortisol level and would be very detrimental to welfare (Grandin, 1997).

Other cases of donkeys survived RTAs and suffered from detached upper lip or wounded hoof were brought to the TVH for treatment. Also due to RTAs a lamed donkey was found wandering in the street (Fig.4).





**Figure 4: Injured donkeys due to RTAs**

This surveillance findings indicated that, high speed is the main cause of RTAs, many roads are not paved, they lack Animals' vehicles accidents have different impacts on the surrounding environment. Health wise, some animals may have been ill and their bodies will be sources of different types of microorganisms that will be spread by air, cars' tires or peoples crossing the road. Also if those bodies were handled improperly, handlers may deal ignorantly with some zoonotic diseases and may catch any of them. Working animals and

#### **CONCLUSIONS AND RECOMMENDATIONS**

It is concluded that killing or injuring of companion and wild animals, livestock or working ones by RTAs are serious conditions that animals face . There are no countermeasures applied by the authorities to protect animals, moreover, the carelessness of vehicles' drivers, non-paved roads and lighting constitute major reasons for RTAs. Road Traffic Accidents leading to animals injury or death are inhumane and have enormous environmental, economical and health impacts. The Animal Welfare Act should be activated and any deficits should be covered. A collaborative work between Animal Resources Authorities and the Road Traffic Authorities is needed. Exclusionary fencing of roads, carefully designed

sufficient lights and the recommended speed is not clearly shown.

livestock that suffer from fractures, wounds and other damages will be useless if they are seriously hurt and there will be an economical loss to their owners and their families. The view of killed and crushed animals with thrown blood and internal organs hurts and reflects an inhumane attitude and interferes with AW. Offensive odors and pollutions have great impacts on public health.

animal crossing underpasses and setting up of reflectors for vehicles lights along the road edge to immobilize animals are effective countermeasures if applied. Drivers should be legally obliged to stop if they are involved with a collision with animals though many flee regardless, leaving them dead. They should stop their vehicles, inform the police immediately and stay at the scene of the accident until the police allow them to leave. This will usually be after they've attended the scene of the accident and inform the authorities responsible for cleaning the place and getting rid of the body safely. Make sure streets are suitable for driving and well lighted with reduced speed limits to give drivers additional

time and distance to avoid TRAs. Educational work is necessary for owners to take care of their

animals and alternative houses should be prepared for stray ones.

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