

**STUDY ON POSSIBLE CAUSES OF BLACK BENGAL KID
MORTALITY IN GAIBANDHA, DISTRICT, BANGLADESH.**



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for the Degree of Doctor of Veterinary Medicine.**

A Production Report Submitted by

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A production is submitted as per approved style and content

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Abstract

Objectives of the study is to find out the cause and factor associated with kids mortality of Black Bengal goat and the management practices among farmers . About 250 kids native goats were used in the study, which looked into potential causes for mortality in seven unions in the Gaibandha sadar, Gaibandha area. Direct interviews with the goat owners helped gather data for a questionnaire. Of 250 kids, 68.04% died as a result of infectious diseases, which was the highest percentage. Pneumonia (15.38%), diarrhea (42.60%), PPR (5.33%), and parasite causes (4.73%) are the most common infectious diseases. Kids mortality in the region are largely caused by the infectious diseases pneumonia and diarrhea. The majority of kids who suffer from non-infectious diseases pass away from weakness.10.06% of the kids who were born premature were weak, small, or in need of help with feeding. Kids in the study region also die from the cold and rain. Kids mortality across the area has been linked to the rain and cold, which is a sign of insufficient kid management. 13.61% of kids died as a result of the rain and cold. According to this study, pneumonia and diarrhea were the two main causes of death among kids. Winter is also a major responsible cause of mortality among kids .Mortality percentage in winter is about 50.30%.Mortality of winter relatively higher than summer and rainy season. Mortality have a good relation with litter size also. Large litter size create more mortality than small and medium. Diseases that afflict kids as well as adults might spread more easily among the herd in overcrowded or unhygienic housing circumstances. . If there are contagious disease carriers in the flock, which could consist of one or more animals, this can be especially hazardous. Disease outbreaks can quickly spread and raise mortality rates in large flocks.

Key words: Mortality, Diarrhea, pneumonia, Rain and cold, Infectious disease

CHAPTER I

INTRODUCTION

High mortality in kids is mostly caused by nutritional deficit in kids, particularly because of prenatal and postnatal mother inadequacy (Husain., 1993). In rural areas, diseases like PPR, goat pox, contagious ecthyma, viral pneumonia, tetanus, brucellosis, mastitis, and foot rot are common causes of goat mortality. Rickettial infections like conjunctivitis are also a common cause of goat mortality (Amalendu., 2003). Season of birth, the type of birth, birth weight, and parity are all important factors that affect the death of children (Acharya., 1988).

Given that goats account for around 28%, 23%, and 28%, respectively, of Bangladesh's total livestock contribution in meat, milk and skin production, it is important to recognize the goat's contribution to human welfare (Husain *et al.*, 1998). Both domestically and internationally, there is a greater market demand for goat meat (Hasan *et al.*, 2007). Goats have a significant role in creating work, revenue, capital storage, and enhancing household nutrition (Devendra, 1992). However, a high rate of goat mortality is a substantial obstacle to raising goats more productively and lowers the production efficiency of all types of goat production enterprises (Miah *et al.*, 2003). Currently, there are 34.10 million goats in our own country (DLS, 2002, Bangladesh Agricultural Census, 1977, FAO, 2002.). Small, marginal, and landless farmers in Bangladesh raise the majority of the goats (55%) followed by medium (35%) and big farmers (10%) (BBS, 1990). 90% of goats raised by humans are Black Bengal goats (Amin *et al.*, 2001).

Particularly important to the rural economy are goats, which might be employed as an approach in Bangladesh to fight poverty. Rural Bangladeshi women engage in extensive goat husbandry with little financial investment (FAO, 1991). A little financial commitment and inexpensive housing are necessary for goat farming. Goats graze on grassy, grassless, and wayside terrain that has been provided with minimally by themselves, such as rice gruel, boiling rice, and vegetable peels. Jackfruit leaves, which are often present in most of the raising regions, are another food source for goats. Goats were perhaps the earliest domesticated animals, as far as is known (Herre *et al.*, 1973)

Objectives of the study:

- ❖ To explore the main cause of kids mortality
- ❖ To observe the management and housing system of farmer

CHAPTER II

REVIEW OF LITERATURE

Ershaduzzaman *et al.*, (2007) showed that, Adult goats (>1 yr of age) typically died from suspected enterotoxaemia during the dry season (October to March), when there were little green grasses in the grazing grounds, which was verified by Gram's staining and ELISA testing. Goats who were does died far more frequently than goats that were bucks. Young goats (3 to 12 months) perished in around 22% of cases, mostly from pneumonia and diarrhea. When it was hot and humid (from July to October), there was a greater rate of mortality (almost 40%). During the research period, the total mortality rate for infants (0-3 months) was roughly 29%, with infectious illnesses such diarrhea, pneumonia, ecthyma, and enterotoxaemia accounting for the majority (63%) of cases. When unintentional causes (predators and mechanical) were removed, mortality was reduced to about 18%. Birth weight has an impact on mortality among kids.

Additionally, it was influenced by the time of year that kids were born, the size of the litter, the kid's gender, and the dam's body weight at kidding, although parity had little to no impact on mortality among kids. Kids died substantially more in the hot and rainy season, just like adult goats. Morbidity was higher in does of goats, where most cases of diarrhea, pneumonia, and other types of ecthyma affected goats of all age groups. The morbidity rate varied according to season.

Donkin and Boyazoglu (2004) discovered in their study that during a three-year period, a mean yearly goat mortality rate for kids of 29% was detected. Breed, gender, or multiple births had no significant impact. Coccidiosis and pneumonia were the two most common causes of goat deaths among kids.

Chowdhury *et al.*, (2002) observed enterotoxaemia was the primary cause of death in adults, whereas infectious diseases including pneumonia and diarrhea were the main causes of death in kids. They observed that 42.39% of kids died from pneumonia, followed by diarrhea (32.61%), ecthyma (20.65%), and bloat (4.34%), including that these higher mortality rates in semi-intensive rearing methods may be caused by greater pressures on the animals. These animals may have responded to these increased stresses by increasing illness incidence and mortality.

Husain *et al.*, (1995) demonstrated that, higher kids mortality was a result of poor husbandry methods, low birth weight, does producing insufficient milk right after kidding, inadequate care, and general poor husbandry practices in the current production system.

David Mackenzie (1995) studied that if given free range and a wide variety of plants, goats are relatively immune to semi-poisonous plants; however, there are times when fodder is low or a gate is left open, which causes them to eat something unsuitable with disastrous results.

Allan Mowln (1992) evaluated that goats consume plant matter rapidly and then digest it later. This occurs most often towards the end of the day or early in the morning. A goat consumes between 3.5 and 5 percent of its body weight in dry stuff per day. According to some data, goats digest fodder more effectively than other ruminants.

Saadullah (1991) researched about Research and Development Activities and Needs of Small Ruminants in Bangladesh and it was noted that very few farmers house their goats and sheep separately. They live in the homestead's open yard as well as on the verandah, hallway, cow shed, and kitchen. According to research, 47% of goats are kept in an open shed, 30% in a cow shed, and the remaining goats are kept inside of a house.

Sriram *et al.*, (1982) performed a study on goat mortality in Addhra Pradesh and found that enteritis and pneumonia were the primary causes of death.

Sherman (1987) researched that high levels of kid mortality are a substantial obstacle to goat rearing productivity growth and also lower production efficiency across all goat production businesses.

CHAPTER III

MATERIALS AND METHODS

Study area:

The study was conducted at some area of Gaibandhasadar, Gaibandha district such as Baluya, Thanapara, Badiyakhali, Ballamjhar, Gidari, Ramchondropur, Kamarjani areas and data was collected from farmers. In Bangladesh's Rangpur Division, Gaibandha is a district in the North Bengal area. Gaibandha Sadar Upazila, Bangladesh. Latitude: 25.3250 Longitude: 89.6278. Geography. Gaibandha has a total area of 2,179.27 square kilometres (841.42 sq mi). It has boundaries with the Kurigram and Rangpur to the north, Bogra District to the south, Joypurhat District, Dinajpur and Rangpur districts to the west, and Jamalpur and Kurigram districts, and the Jamuna river to the east.

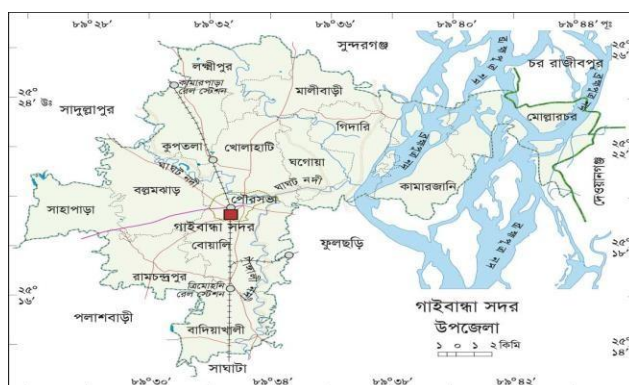


Figure 01: Study area of Gaibandha Sadar

Duration of work:

Duration of the study was 16 April 2023 to 08 June 2023 at the time of UVH placement in Gaibandha sadar.

Farmer's interview :

The study was carried out in Gaibandha Sadar's 7 union in the Gaibandha district. Farmers were asked for information after completing a questionnaire. The same questionnaire was used to gather all the information. Farmers are randomly selected. There have small, medium and large scale farmers. They do farming to sell meat and young goats. Some farmers have their own fodder land and some farmers graze their goat in open ground. They are worried about kids mortality of their farm and they want to know the solution.

Farm Selection:

Farms are selected randomly in the study area. In those farm their management, housing and feeding system are interviewed. Keeping detailed records of my findings and assessments for each potential farm site. Farm of seven union of the study area is selected.

Data collection:

Firstly questionnaire was prepared containing some basic questions with a view to extract information regarding management and preventive measures undertaken to the objectives and emphasis was given main key word mortality like location of farm, Source of farm, Breed, Feeding, Housing, Types of diseases, Treatment, Vaccination and cause of death. Data were collected by interviewing the owner based on the questions included in questionnaire. Goat farmers mainly reared Black Bengal goat because of its high prolificacy and good quality meat. They are very well adapted in our country area.

Preparation of questionnaire:

The questionnaire was created keeping in mind the study's goals. The same questionnaire was used to obtain information from owners of domestic and cross-breed goats. The questionnaire model is displayed below.

General Information of Farm and Farmer:

1. Name of the farm:
2. Farmer's name:
3. Educational qualification:
4. Sex of farmer:
5. Years of farming:
6. Cause of farming:
7. Any training received on farming:
8. Contact Number:

Physiological Data:

1. Species: Goat
2. Breed: Black Bengal
3. Sex: Male/Female

4. Flock size: (Male :..... Female:.....kids)
5. Ratio of Male and Female:..... :
6. Age:
7. Body condition Score: 1 / 2 / 3 / 4 / 5
8. Body Weight:
9. Physiological status:
10. Color: Solid black / Black with toggenburg pattern / Black with Dutch belt spotting / other combination

Housing Data:

1. Rearing system: Confinement/Semi intensive
2. Housing type: kacha / Brick walled house / others
3. Floor: Earthen type / Brick finished / Cemented floor / Macha type
4. Housing Location: Attached with residence / Separate

Feeding Data:

1. Feeding system: Tethering / Intensive / semi-intensive
2. Amount of Feed: Concentrate:..... Roughage:.....
3. Type of Roughage: Grass / Tree leaves
4. Name of the roughage:
5. Name of the concentrate:
6. Grazing: Grazing from morning to noon/ grazing separately in morning and afternoon
7. Grazing during rainy season: yes / no
8. Feeding during rainy season: Tree leaves / Grass
9. Type of feed supply in pregnant period:.....
10. Source of water: pond water /well water / Tube well water
11. Amount of water supply:.....

Feeding data of kids:

1. Kids below 1 months of age : milk/whole milk/milk replacer
2. Frequency of giving milk(in a day):
3. Kids More than 1 month of age:
4. Grass Only/grass + milk/concentrate

Reproduction Data:

1. Breeding policy: Natural mating / Artificial Insemination
2. Age at first service:.....
3. Age at first kidding:.....
4. Postpartum estrus interval(days):.....
5. Service per conception:.....
6. Kidding interval:.....
7. Litter size :.....
8. Birth weight: Male kids:
Female kids:
9. Amount of Milk production:
10. Weaning weight: Male kids
Female kids:
11. Kid mortality up weaning:

Clinical Data:

1. Vaccination: Yes / No
2. If yes, Name of the Vaccine:
3. Regular Deworming: Yes / No

Heat stress management:

Do you follow any extra procedure to prevent stress in addition to natural air movement?.

Yes/No

If yes which procedure do you follow?

1. sprinkler
2. spray water on roof top /others

What types of disease causing kids mortality in your farm?

Cause of death	Number of kids died	Mortality rate	Cause of death	Number of kids died	Mortality rate
Udder problems of mother (distended teats, thick teats)			Accidents		
Kids born prematurely (small/weak/kids needed help with suckling)			rain and cold		
Doe had no/little milk			Diarrhoea		
Illness			Pneumonia		
Doe died			Parasitic cause		

CHAPTER IV

RESULTS

Effect of Disease to mortality:

Infectious disease accounted for 68.04 percent of kids mortality in Gaibandha Sadar. which were followed by pneumonia (15.38%), diarrhea (42.60%), PPR (5.33%), and parasite causes (4.73%).Pneumonia and diarrhea are two infectious diseases that constitute a major contributor to the death of kids in the region. Sriramet *al.* (1982) and Koulet *al.* (1988) also observed that main reason of mortality were pneumonia and enteritis.

In case of non-infectious disease most of the kids are died due to weakness .Followed by percentage of kids born prematurely(weak/small kids/kids needed helps with suckling)(10.06%),udder problems of mother(4.14%),doe had no/little milk(2.37%).Rain and cold is also responsible for kids mortality .The percentage of kids died due to rain and cold (13.61%).It was due to poor husbandry practices of farmers ,lack of awareness, climatic condition of the area Husain *et al.* (1995) also demonstrated that low birth weight, failure to produce enough milk soon after giving birth, inadequate care, and generally poor husbandry techniques in the existing production system all contributed to greater kids mortality.

Table 1: Mortality rate of kids in the study area (Gaibandha sadar):

Type of Diseases	Reason of death	Number of cases	Percentage (%)	
Infectious	Diarrhoea	72	42.60%	68.04%
	PPR	09	5.33%	
	Parasitic cause	08	4.73%	
	Pneumonia	26	15.38%	
Non-infectious	Udder problems of mother	07	4.14%	18.35%
	Kids born prematurely (small/weak kids/kids needed help with suckling)	17	10.06%	
	Doe had no /little milk	04	2.37%	
	Doe died	03	1.78%	
Other cause	Rain and cold	23	13.61%	13.61%
Total		169	100%	

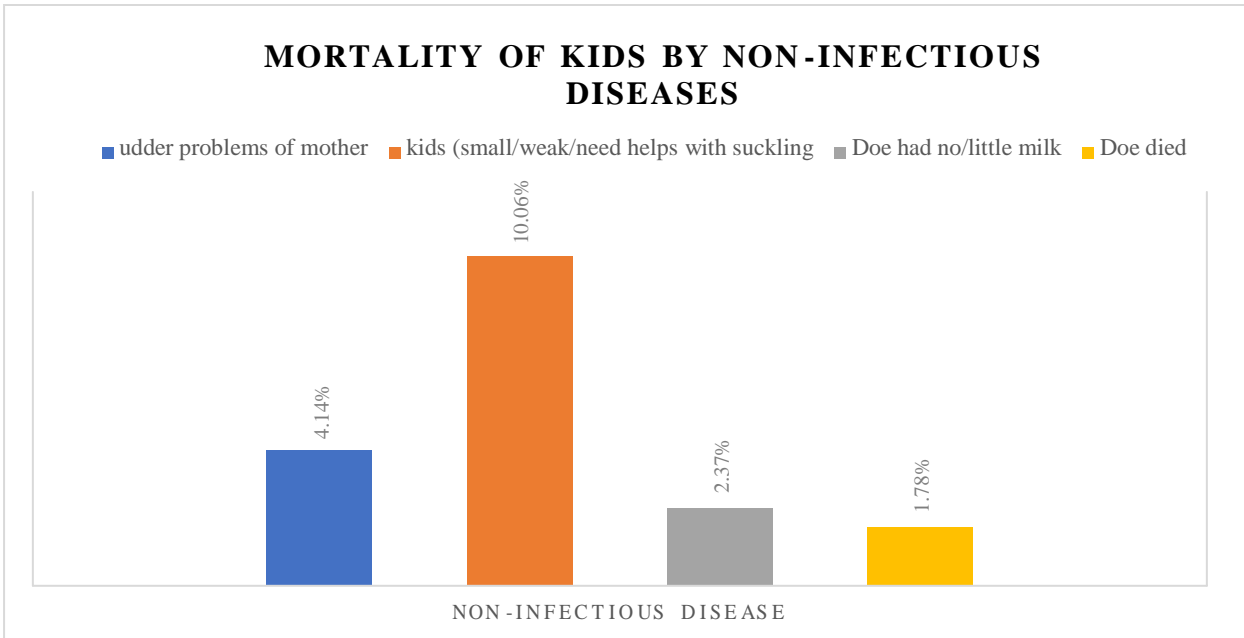
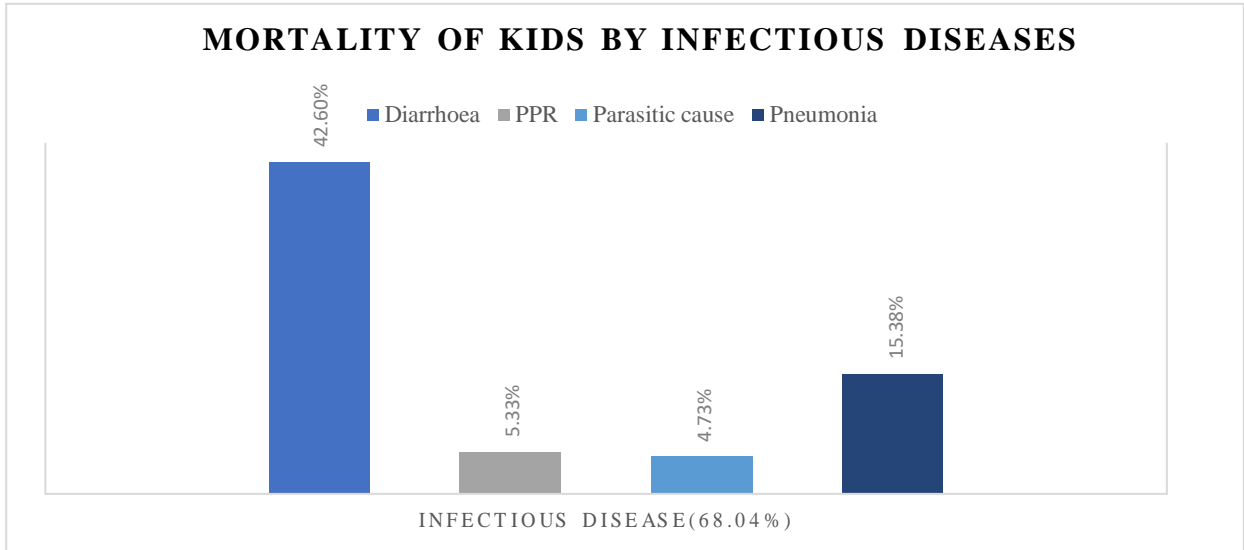


Figure 02: Mortality of kids from table 01

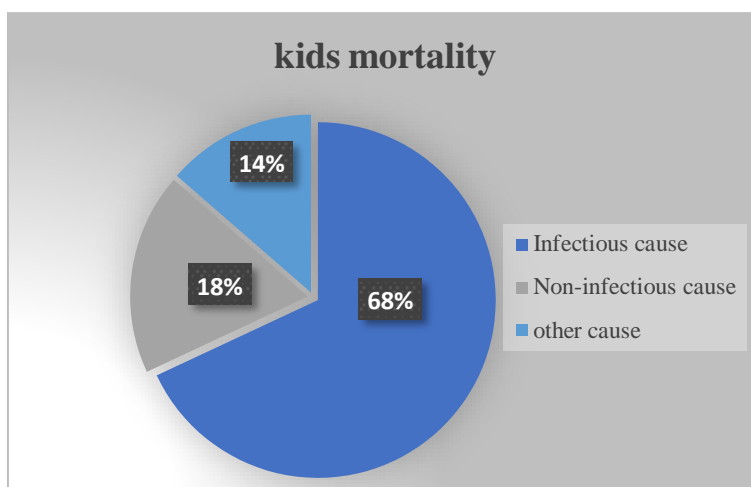


Figure 03: Mortality in pie chart from table 01

Seasonal effects on mortality:

Table 2: Effect of season on mortality of kids at Gaibandha sadar

Season	Number of death	Mortality%
Summer	36	21.30
Rainy	48	28.40
Winter	85	50.30
Total	169	100%

Season also affect the mortality. Highest mortality observed in winter (50.30%). In winter more care and management is needed for kids .In summer it was 21% and in rainy season it was about 29%. Proper care in winter is much needed to control the mortality rate of kids .Goats are very sensitive to rain and cold,so proper management is necessary to control the mortality rates.Winter is also one of the major cause of kids mortality in study area .

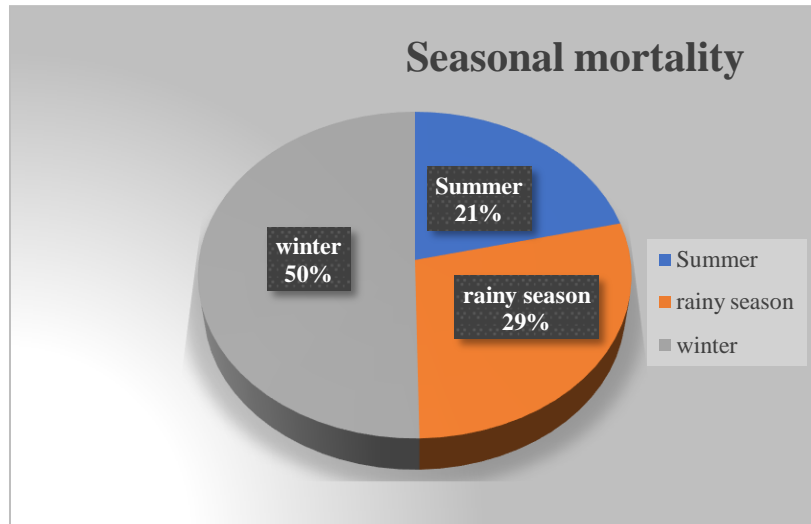


Figure 04: Seasonal mortality from table 02

Mortality of kids in different age:

Table 03: mortality of kids at different stage

AGE	Number of kids died	Mortality rate
0-3 month	65	38.46%
4-6 month	43	25.44%
6-8 month	34	20.12%
8-12 month	27	15.98%
Total	169	100%

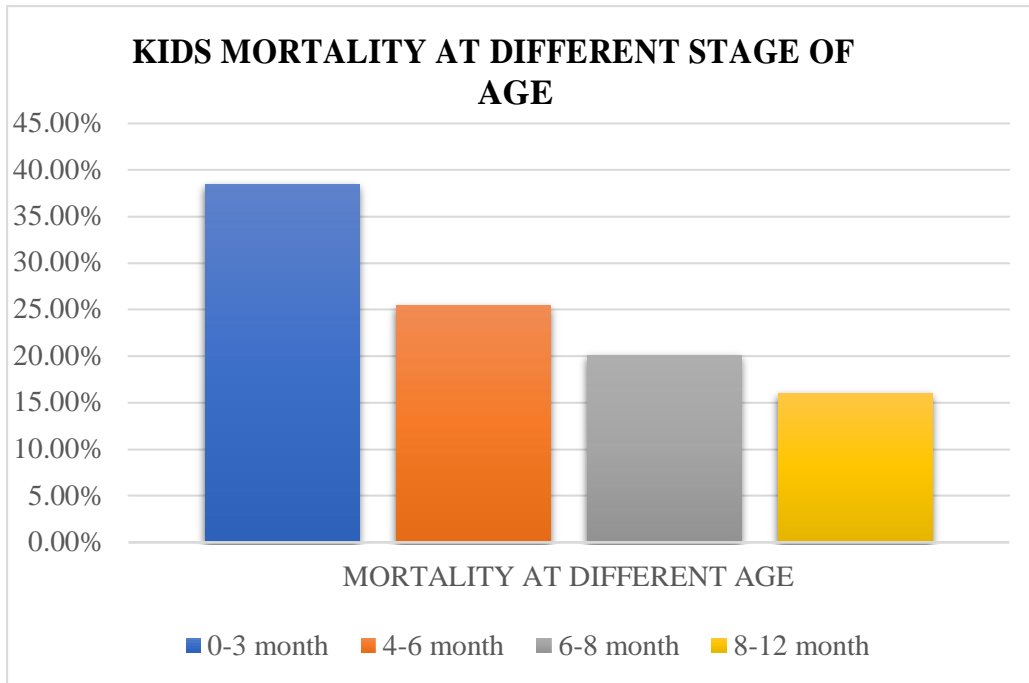


Figure 05: mortality at different stage from table 03

It is observed that kids are died most at growing stage (0-3) month of age .It was about 38.46%.At 4-6 month it was 25.44%, at 6-8 month 20.12% and 15.98% at the age of 8-12 month. Ershaduzzaman *et al.*, (2007) observed that, mortality among young goats (3 to 12 months) was around 22%, with the most common causes of death being pneumonia and diarrhea. Mortality was highest (almost 40%) during the hot and humid season (July to October). During the research period, the total death rate among kids (0-3 months) was roughly 29%, with infectious diseases accounting for the majority of cases (63%).This finding is confirmed by the outcome. Inadequate nutrition, both during pregnancy and early childhood, can lead to stunted growth and weakened immune systems, making kids more vulnerable to infections and other health problems.

Kids Mortality related to housing:

Table 04 : Types of Housing related to mortality :

Types of house	Total number of kids	Number of kids died	Percentage (%)
Building	75	30	24.39%
Bamboo made	120	55	44.72%
Corrugated steel steel sheet	60	38	30.89%
Total	250	123	100%

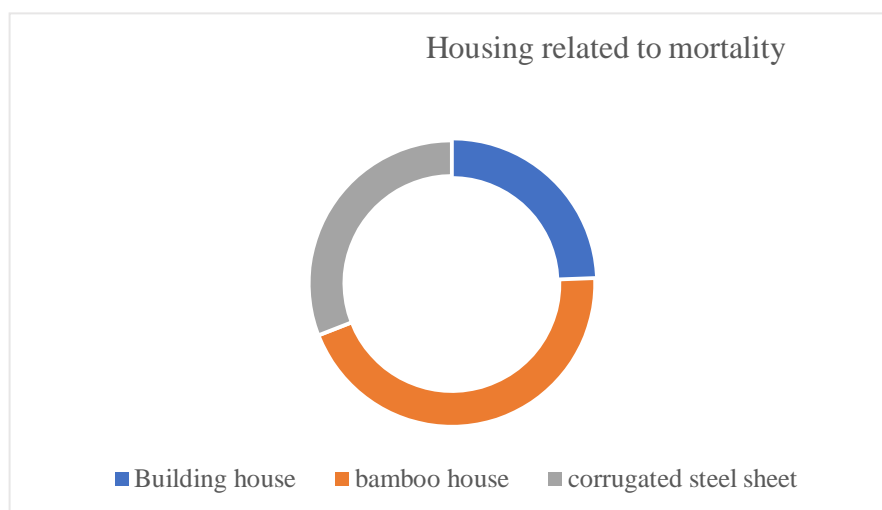


Figure 06 : Mortality at different types of houses from table 04

Bamboo made house cause higher mortality, respectively 24.39% and 30.89% in Kids mortality also related to housing system also .About 44.72% kids died in bamboo building house and corrugated steel sheet house .Higher mortality indicates poor husbandry and management practices . Goat kids can be exposed to harsh weather, such as cold temperatures, rain, and heat, if they are not provided with proper protection. Young goats may die from hypothermia, heat exhaustion, and other weather-related health problems if exposed to extreme weather. In goat pens or shelters, overcrowding can cause stress and competition for resources like food and water. Goat kids' immune systems can become weakened by stress, increasing their susceptibility to illness and decreasing their chances of surviving.

Mortality related to litter size of doe:

Table 05 : Mortality related to litter size:

Number of litter size	Total does	Number of kids died	Percentage (%)
One	70	20	17.39%
Two	65	40	34.78%
Three	30	55	47.83%
TOTAL	165	115	100%

We can see that large number of litter size affect the mortality of kids most .It is due to lack of care of mother. Some kids may not receive sufficient nutrition, leading to weaker or smaller kids that are more susceptible to disease and stress. Colostrum is the first milk produced by them other after giving birth, and it's crucial for providing essential nutrients and antibodies to newborn kids In cases of large litter sizes, some kids may not get adequate access to colostrum, which can weaken their immune systems and increase their vulnerability to diseases. A doe may struggle to provide adequate care and attention to a large number of kids, especially if she has more kids than she can comfortably nurse or protect. This can lead to some kids being neglected or not receiving enough maternal care. While large litter sizes can present challenges, with careful management and attention to the needs of both the doe and her kids, it's possible to minimize kid mortality and promote the health and well-being of the entire goat herd. Percentage of mortality rate in larger litter size is about 47.83%.

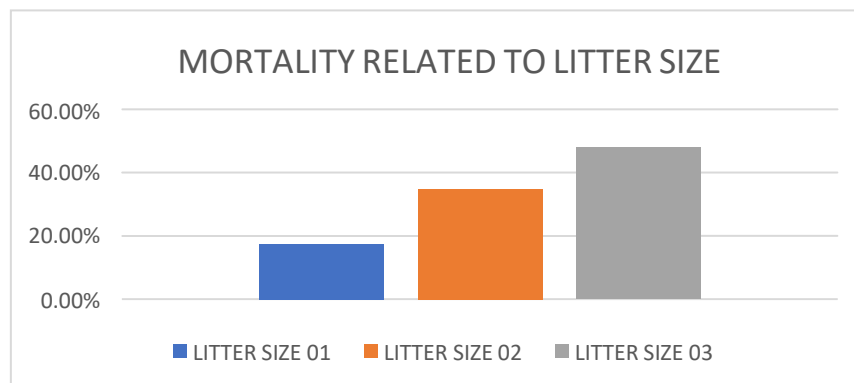


Figure 07: Mortality related to litter size from table 05

Effect of flock size related to mortality:

Table 06 : Mortality of kids related to flock size:

Categories of farms	Total number	Number of kids died	Mortality rate (%)
Small (15-20)	2	25	24.04%
Medium (25-30)	3	37	35.57%
Large (30-50)	8	42	40.39%
Total	14	104	100%

The quick spread of diseases among animals can be facilitated by large flock sizes. Diseases are often spread from animal to animal in close proximity. This can be particularly problematic if there are contagious disease carriers among the flock, which may include one or more animals. In big flocks, disease outbreaks can spread swiftly and increase mortality. Animals may become stressed and act aggressively in high population densities. In some instances, this can lead to harm or even death, especially in species that are territorial or naturally hierarchical. In larger flocks, diseases can spread more easily due to the proximity of animals. Once a disease starts affecting one member of the flock, it can quickly pass to others. This can lead to higher mortality rates .

In our study we found that the mortality in larger flock is higher 40.39%. Small and medium flock have mortality rate of kids about 24.04% and 35.57%.

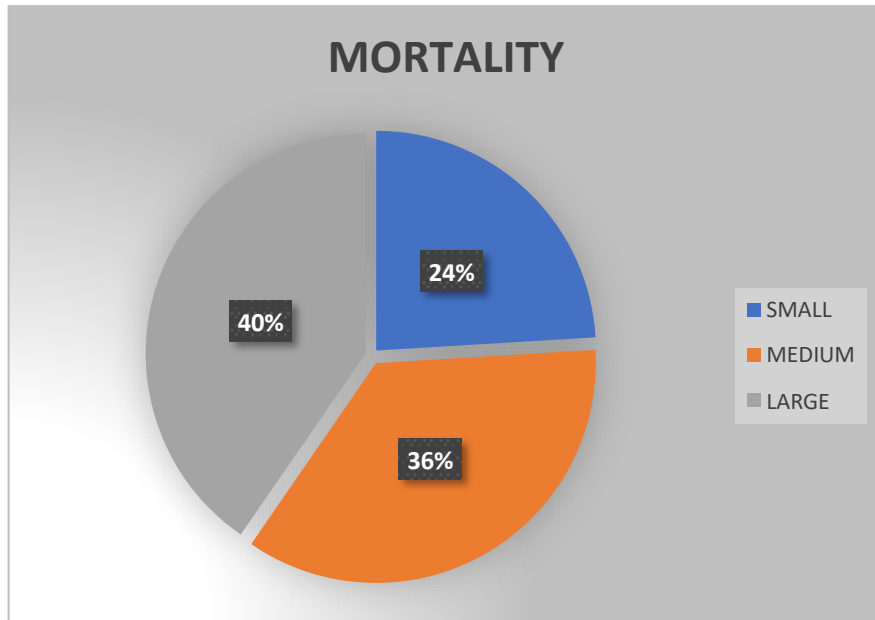


Figure 08: Mortality of kids related to flock size from table 06

CHAPTER V

DISCUSSION

Effect of Disease:

Kids diarrhea, which is frequently brought on by infections like E. coli, coccidia, or rotavirus, can cause severe dehydration and even death if it is left untreated. Risk factors include contaminated water and poor sanitation. In study area, infectious disease caused 68.04 percent of kid's deaths, followed by pneumonia (15.38%), diarrhea (42.60%), PPR (5.33%), and parasitic causes (4.73%). Two infectious diseases that significantly contribute to the death of kids in the area are pneumonia and diarrhea. Both Sriram et al. (1982) and Koul et al. (1988) noted that pneumonia and enteritis were the primary causes of mortality. The majority of kids who suffer from non-infectious diseases pass away from frailty. Premature birth rate (weak/small/kids needed help sucking) (10.06%), udder issues with the mother (4.14%), and lack of/little milk (2.37%) were the following categories. Kids mortality is also caused by rain and cold. Rain and cold were the leading causes of death among kids (13.61%). It resulted from farmers' poor husbandry techniques, ignorance, and the local climate. Husain et al. (1995) also showed that in the current production system, poor husbandry practices, inadequate care, low birth weight, failure to make enough milk immediately after giving birth, and other factors all contributed to higher mortality rates among kids. Donkin and Boyazoglu (2004) discovered in their study that during a three-year period, a mean yearly goat mortality rate for kids of 29% was detected. pneumonia was the most common causes of goat deaths among kids. This study also support the research of Donkin and Boyazoglu (2004).

Effect of season:

Seasons also have an impact on mortality. Winter saw the highest number of deaths (50.30%). Kids require greater supervision and attention in the cold. It was 21% in the summer and around 29% in the wet season. Winter care is crucial for reducing the death rate of kids. Since goats are extremely susceptible to rain and cold, good management is essential to reducing mortality rates. Another significant factor in kids death in the study area is winter. Sherman (1987) researched that high levels of kid mortality are a substantial obstacle to goat rearing productivity growth and also lower production efficiency across all goat production businesses. Newborn kids are susceptible to hypothermia, especially in cold or wet conditions. If they are not kept warm

and dry, they can die from exposure. Winter conditions can force predators to become more active in search of food. Kids may be more vulnerable to predation during winter if shelter and security measures are not sufficient. Goat farmers should make sure their shelter is well-insulated, well aired, and draft-free to prevent mortality among kids during the winter. It's essential to supply enough good-quality hay and water that won't freeze. Additional precautions can include keeping a tight eye on kid's health and wellbeing during cold spells and, if necessary, employing heat lamps in shelters. To ensure the survival of baby goats in harsh winter conditions, proper feeding and predator protection should also be given top priority.

Mortality at different stage :

Kids tend to die the most between the ages of 0 and 3 months when they are growing. About 38.46% of it. It was 25.44% at age 4-6 months, 20.12% at age 6-8 months, and 15.98% at age 8-12 months. According to Ershaduzzaman et al. (2007), pneumonia and diarrhea were the most common causes of death in young goats (3 to 12 months old), accounting for around 22% of all goat deaths. The hot and humid season (July to October) has the greatest mortality rate (almost 40%). A total of 29% of children (0–3 months) died throughout the study period, with infectious illnesses being the leading cause of mortality (63%). The result supports this discovery. Inadequate nutrition, both during pregnancy and early childhood, can lead to stunted growth and weakened immune systems, making kids more vulnerable to infections and other health problems. Inadequate nutrition for pregnant does (female goats) can result in weak or underdeveloped kids. Similarly, insufficient milk production or poor milk quality from the mother goat (doe) can lead to malnourished kids. Difficult or prolonged births, often referred to as dystocia, can lead to injury or death for both the kid and the doe. Colostrum is the first milk produced by the doe after kidding. It contains essential antibodies that provide passive immunity to the kid. If a kid doesn't receive enough colostrum in the first few hours of life, it may be more susceptible to diseases.

Housing:

Diseases that afflict kids as well as adults might spread more easily among the herd in overcrowded or unhygienic housing circumstances. Farmer monitoring of the health and welfare of newborn goats may be hindered by poorly built housing, resulting in missing or delayed actions when health issues arise. Higher mortality is associated with bamboo-made homes, 24.39% and 30.89% respectively. kid's mortality is also influenced by the housing structure. On

the flip side, poor ventilation can lead to a buildup of ammonia and other harmful gases, increasing the risk of respiratory issues and infections among kids. Kids died in bamboo and corrugated steel houses at a rate of about 44.72%. Higher mortality is a sign of ineffective management and husbandry techniques. If they are not given the correct protection, goat kids may be exposed to inclement weather, such as freezing temperatures, rain, and heat. If exposed to extreme weather, young goats may die from hypothermia, heat exhaustion, and other weather-related health issues. Overcrowding can lead to stress and rivalry for resources like food and water in goat pens or shelters. Stress can impair a goat kid's immune system, making them more susceptible to disease and decreasing their chances of survival. Dirty, wet, or soiled bedding can create an unsanitary environment, increasing the risk of bacterial infections and parasites. Ideally, adult and kid goats should not exist alongside one another, especially in the crucial first several weeks of life. Failure to do so could result in mistakes or injuries, and older goats aren't always kind to young kids.

Litter size:

We can see that big litter sizes have the greatest effects on mortality among kids. It is a result of the mother's ignorance. Some kids might not get enough nutrition, resulting in smaller, weaker kids who are more prone to illness and stress. Colostrum, the first milk the mother produces after giving birth, is vital for giving the kids the essential nutrients and antibodies they need to survive. Some infants in huge litter sizes may not have enough access to colostrum, which might impair their immune systems and make them more susceptible to illness. When a doe has more young than she can comfortably nurse or guard, she may find it difficult to provide each one of them the care and attention they need. Some kids may end up being neglected or not receiving enough mother care as a result of this. While large litter sizes can pose difficulties, it is possible to reduce kid mortality and improve the health and wellbeing of the entire goat herd with careful management and attention to the requirements of both the doe and her young. About 47.83% of greater litter sizes experience mortality. Study support the invention of Husain et al., (1995) demonstrated that, higher kids mortality was a result of poor husbandry methods, low birth weight, does producing insufficient milk right after kidding, inadequate care, and general poor husbandry practices in the current production system. In hot weather, kids from large litters may struggle to stay hydrated, especially if they are competing for access to water sources. Mortality

can be reduced. If possible, separate large litters into smaller groups to reduce competition for milk and ensure all kids have access to colostrum. Proper management and care are key to maximizing the benefits of larger litters while minimizing the risks.

Effect of flock size:

Large flock sizes may accelerate the transmission of disease among animals. Animals near to one another frequently contract diseases from one another. If there are contagious disease carriers in the flock, which could consist of one or more animals, this can be especially hazardous. Disease outbreaks can quickly spread and raise mortality rates in large flocks. High population density can cause animals to grow anxious and behave aggressively. In some cases, especially in species that are territorial or inherently hierarchical, this might result in damage or even death. Due to the close proximity of the animals, illnesses can spread more quickly in larger flocks. A sickness can quickly spread to other flock members once it begins to harm one of them. This might raise mortality rates. With a large number of animals to care for, it may be more challenging for farmers to provide individual attention to each kid, especially during critical times like birth or when health issues arise. In large flocks, there may be limited access to pasture, forage, and grazing areas. This can lead to scarcity of food resources, especially in dry seasons, affecting the nutrition and health of kids. The study find out these things related to large flock size. A number of variables, such as management techniques, available resources, and environmental circumstances, can affect how big flock sizes affect juvenile mortality. Despite the possibility of higher mortality brought on by competition, the spread of disease, and a shortage of resources.

CHAPTER VI

CONCLUSION

Kids mortality is mortality mainly affected by diarrhea and pneumonia because of poor management system and limited knowledge about management system of kids. Mortality of kids affect the production of the farmers. For young goats, diarrhea and pneumonia are potentially serious health issues that, if treated improperly, can result in increased mortality. Dehydration and electrolyte imbalances from diarrhea, which is frequently brought on by infectious diseases like parasites or bacteria, can be deadly if not treated early. Similarly, pneumonia, which is commonly caused by viruses or bacteria, can lead to severe respiratory distress and death if left untreated. Effective prevention and management strategies are crucial in reducing mortality rates among kids with these conditions. These strategies may include proper hygiene and sanitation practices, timely vaccination protocols, appropriate nutrition, quarantine procedures for sick animals, and prompt veterinary intervention when needed. Proper care is also needed in winter season. Large number of litter size affect the mortality of kids most .It is due to lack of care of mother. Some kids may not receive sufficient nutrition, leading to weaker or smaller kids that are more susceptible to disease and stress. Goat kids' immune systems can become weakened by stress, increasing their susceptibility to illness and decreasing their chances of surviving.

CHAPTER VII

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