Chapter I: Introduction

In Bangladesh, livestock is an integral part of the diverse agricultural structure that has existed for centuries, accounting for 1.44% of the gross domestic product (GDP) (DLS, 2021). There are about 24.54 million cattle, 26.60 million goats, 3.67 million sheeps, 304.106 million chickens, 61.75 million ducks in our country (DLS, 2021). In addition, 20% (directly) and 50% (partial) of the population depend on livestock for their livelihood (DLS, 2021). About 80% of its population is employed in agriculture and livestock farming (Uddin et al., 2020) . Due to the high demand for milk, meat and especially skin in domestic and foreign markets, livestock farming has become a huge source of income for vulnerable population groups. Ruminants, particularly cattle and goats, make up the majority of livestock raised in Bangladesh basically in rural areas where most animals are kept under traditional management systems. Moreover, goats have been recognized as an integral component of the existing mixed farming systems to support the landless rural people. Being small in size, goats can freely be reared by the unemployed women and children. As that is the dynamic capacity of this new sub-sector, it calls for government interest to animal health and production. Among the various constrains in the development of cattle, diseases are one of the most important limiting factors which not only degrade the productivity of cows but also causing mortality (Islam et al., 2015) . There exists a variety of problems in livestock sector of Bangladesh such as insufficient pasture land, lack of technical expert, insufficient supply of vaccine, lack of epidemiologic study, shortage of government employee in the field level and various diseases of different systems of animals (Uddin et al., 2020) . Besides this, poor hygienic condition with inappropriate bio-security practice are also responsible for different diseases and reproductive failure of cattle and goat (Meher et al., 2021). Most of our animals are being weak, unhealthy, emaciated and the productive performances are not in satisfactory level due to malnutrition and diseases (Badruzzaman et al., 2015). Infectious diseases cause great damage to livestock. Understanding at the incidence, prevalence, distribution and determinants or hazard elements of illnesses in a location is crucial for attempting affordable control program. Veterinary hospital is a really perfect and dependable delivery of information regarding animal illnesses and their resolution. Residents of neighboring areas are constantly transporting animals to upazila veterinary hospital. Investigation of the case report offers an intensive concept concerning the disease troubles at neighborhoods. This study was conducted and designed to identify and analyze trends in clinical diseases and

disorders in goats and cattle available at Upazila Veterinary Hospital in Rangpur Sadar to understand the diversity of diseases in ruminants. Therefore, the study was conducted to achieve following objectives:

- To determine the proportionate prevalence of different diseases and disorders of cattle and goat population.
- To study the comparative clinical prevalence of diseases and disorders of cattle and goats.

Chapter II: Methodology

2.1. *Study area and agro-climate*

The study was conducted in the sadar upazila, Rangpur, Bangladesh. The climate of the study is classified as warm and temperate. The summers are much rainier than the winters. The soil composition is mainly alluvial (80%) of the Teesta River basin and the remaining is barren soil. The temperature ranges from 11-32 ºC and the annual rainfall averages 2931 mm.

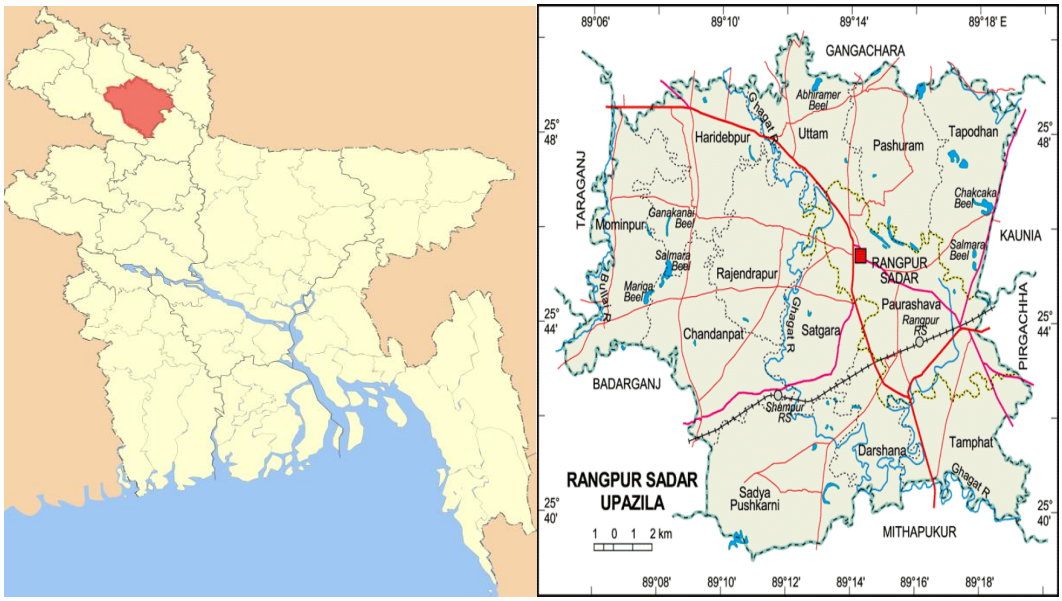

Figure 1: Study area

2.2. *Study Period*

The study period is about 3 months from February 1 to April 30, 2021.

2.3. *Study Population*

The study population is cattle and goat. Data were obtained from outdoor hospital patients. A total of 300 (goats) and 250 (cattle) cases were investigated.

2.4. Diagnostic procedure of diseases and disorders

2.4.1. *General examination*

In the visual examination, the patient's physical condition, behavior, posture, gait, superficial skin wounds, prolapse of the uterus and vagina, salivation, runny nose, bloating, and movement disorders were observed**.**

2.4.2. *Physical examination*

Examination of various parts and systems of the body of each sick animal was investigated using animal palpation, percussion, auscultation, needle puncture, and gait procedures**.**

2.4.3. *Clinical examination*

Body temperature, pulse, and respiration rate were recorded in each of these sick animals. The following diseases and disorders were diagnosed by synthesizing the medical history, owner's complaints, and symptoms by age for 550 clinically sick ruminants (cattle = 250, goat = 300). A careful study of the history of each case (present and past) provided recommendation for animal testing.

2.5. *Statistical analysis:*

The resulting information was downloaded and stored in Excel Sheet. The data was then analyzed using MS Excel 2010. Results are presented as frequencies with percentages.

2.6. ***Case definition (goat)***

Sl. No.	Clinical Sign	Tentative Diagnosis
1	High fever (105-107) °F, blackish discoloration of muscle, crepitating sound, bad odor	Black leg
2	Redding of eye, swelling of eyelids, squinting, epiphora	Keratoconjunctivitis
3	Nystagmus, lock jaw, stiffness of the muscle, tail and hair erect	Tetanus
4	Change in the milk and udder, clot milk, swollen and hot udder, fever	Mastitis
5	Swollen, discolored in the interdigital space, Foul smelling discharge, increase temperature	Foot Rot
6	Bellowing, hyperesthesia, uncontrolled urination, paralysis of hind leg	Rabies
7	Scrabie lesion on mouth, exudate comes out, irritating, anorexia	Contagious ecthyma
8	Incoordination and head pressing against hard object, anorexia, softness of the bone in the head region	Gid Diseases
9	Anorexia, arch back and abducted elbow, pain on Thorax, auscultation- expiratory grunting sound	Contagious Bovine Pleuro -Pneumonia
10	Heavy, grey white crust raised perceptively, no itching, alopecia, ring like lesion	Dermatophytosis
11	Anemia, irregular period of fever, enlarged lymph node, pale mucous membrane, no hemoglobinuria	Anaplasmosis
12	Continuous lacrimation without no lesion, conjunctivitis, photophobia, worm in the conjunctival sac	Eye worm infestation
13	Dipteran fly larvae in the wound, bad odor, discharge from the area	Myiasis
14	Intense itching, erosion, hypotricosis, nodule like lesion	Mange

15	Sudden onset of fever, discharge from the eye and nose, foul smelling diarrhea	PPR
16	Loss of appetite, abdominal discomfort, profuse diarrhea, fever, sudden death	Enterotoxaemia
17	Watery diarrhea with or without mucous or blood, dehydration, emaciation, sudden death	Coccidiosis
18	Fever with 104 to 106 °F, moist and painful cough, crackling sound, lethargy	Pneumonia
19	Lethargy, rough hair coat, weight loss, no appetite, diarrhea	Worm infestation
20	Aborted fetus comes out, bloody discharge, foul odor	Abortion
21	Absence of heat, cachexia	Anestrous
22	Lack of rumination, muscle twisting, diarrhea or lack of manure, depression	Acidosis
23	Dull, depression, separation from the herd, off feed	Indigestion
24	Painful urination, Dribbling urine, straining to urinate, abdominal pain	Urolithiasis
25	Lice present in the body, itching, Rough hair coat	Lice infestation

2.7. ***Case definition (Cattle)***

Sl. No.	**Clinical Sign**	**Tentative Diagnosis**
01	Temp: 104.5° F-105° F, lameness, nasal discharge, constipation and dullness	Epimeral Fever
02	Temp:104° F-105°F, soar in the mouth and hoof , and loss of appetite	Foot and Mouth Diseases (FMD)
03	Reddening of the udder , swollen udder, pain on palpation and ceased milk production	Mastitis
04	Maggot found in the open wound and loss of appetite	Myiasis

05	Swollen umbilical region , pain on palpation , purulent discharge , loss of appetite , dullness	Naval ill
06	Profuse bloody diarrhea , straining during voiding , loss of appetite and Temp: 102° F	Coccidiosis
07	Diarrhea, inappitance, no fever, dehydration, anemia, emaciation.	Worm Infestation
08	Outgrowth lesion on neck, lip, ear, around head.	Warts
09	Circular lesion on skin, Itching, Restlessness, Unthriptiness	Ring worm
10	Crack, fissure, broken (partially or full), pain at the hoof region	Hoof Injury
11	Swollen of abdomen, salivation, drum like sound come during palpation	Bloat
12	Redding of eye, swelling of eyelids, squinting, epiphora	Keratoconjunctivitis
13	High fever (105-107) ° F, red color urine, pale mucous membrane	Bacillary haemoglobinuria
14	Multiple nodule like lesion in skin, ruptured of nodule, fever, loss of appetite	Lumpy Skin Diseases (LSD)
15	Lack of rumination, muscle twisting, diarrhea or lack of manure, depression	Acidosis
16	Absence of heat, cachexia	Anestrous
17	Aborted fetus comes out, bloody discharge, foul odor	Abortion
18	Placenta does not remove after 48 hours of parturition	Retained Placenta
19	Lice present in the body, itching, Rough hair coat	Lice Infestation
20	Bellowing, hyperesthesia, uncontrolled urination, paralysis of hind leg	Rabies
21	Continuous lacrimation without no lesion, conjunctivitis, photophobia, worm in the conjunctival sac	Eye worm infestation

Chapter III: Results

3.1. *Clinical prevalence of disease and disorders in goats*

A total of 25 diseases and disorders were enrolled from 300 goats delivered for treatment to a veterinary hospital during the study period. Among the 300 cases, 71(23.67%), 57(19%), 54(18%), 63(21%), 30(10%), 9(3%) , 11(3.67%), 5(1.66%) were recorded in Gastrointestinal problems (Acidosis, simple indigestion, enterotoxaemia, worm infestation, coccidiosis), Musculoskeletal problems (Tetanus, black leg, foot rot, myiasis, polioencephalomalacia), Integumentary problems (Dermatophytosis, mange, lice infestation, contagious ecthyma), Urogenital problems (Abortion, anestrus, urolithiasis, mastitis), Respiratory problems (Pneumonia, contagious bovine pleuro-pneumonia, PPR) , Nervous Problems (Rabies, gid diseases), Sense organ problems (Keratoconjunctivitis, eye worm infestation), Circulatory (Anaplasmosis) respectively in goat (Table 1).

Table 1: Clinical prevalence of disease and disorders in goats at upazila veterinary hospital, Rangpur sadar, Rangpur (N=300)

Sl. No.	System Involvement	Diseases	No. of affected	Percentage (%)	Total (%)
01	Gastrointestinal	Acidosis	12	4.00	23.67
		Simple indigestion	16	5.33	
		Enterotoxaemia	2	0.67	
		Worm infestation	32	10.67	
		Coccidiosis	9	3.00	
02	Musculoskeletal	Tetanus	3	1.00	19
		Black leg	2	0.67	
		Foot Rot	25	8.33	
		Myiasis	21	7	
		Polioencephalomalacia	6	2	
03	Integumentary	Dermatophytosis	13	4.33	18
		Mange	19	6.33	
		Lice infestation	17	5.67	
		Contagious ecthyma	5	1.67	

04	Urogenital	Abortion	6	2	21
		Anestrus	23	7.67	
		Urolithiasis	12	4	
		Mastitis	22	7.33	
05	Respiratory	Pneumonia	14	4.67	10
		Contagious bovine pleuro-pneumonia	4	1.33	
		PPR	12	4	
06	Nervous	Rabies	1	0.33	3
		Gid diseases	8	2.67	
07	Sense organ	Keratoconjunctivitis	8	2.67	3.67
		Eye worm infestation	3	1	
08	Circulatory	Anaplasmosis	5	1.66	1.66

3.2. *Sex wise comparison of clinical prevalence of diseases and disorders in male and female goats*

The comparative clinical prevalence of diseases and disorders in male and female goats are presented in Table 2. And it turns out that female are more vulnerable than male.

Table 2: Comparative clinical prevalence of male and female goats at the upazila veterinary hospital, Rangpur sadar, Rangpur (N=300)

Sl. No.	System Involvement	Diseases	Male		Female		Total (%)	
			No. of affected	(%)	No. of affected	(%)	Male	Female
01	Gastrointestinal	Acidosis	5	1.67	7	2.33	10	13.67
		Simple indigestion	10	3.33	6	2		
		Enterotoxaemia	0	0	2	0.67		
		Worm infestation	12	4	20	6.67		
		Coccidiosis	3	1	6	2		
02	Musculoskeletal	Tetanus	2	0.67	1	0.33	10	9
		Black leg	2	0.67	0	0		
		Foot Rot	14	4.67	11	3.67		
		Myiasis	8	2.67	13	4.33		
		Polioencephalomalacia	4	1.33	2	0.67		
03	Integumentary	Dermatophytosis	9	3	4	1.33	10.33	7.66
		Mange	6	2	13	4.33		
		Lice infestation	12	4	5	1.67		
		Contagious ecthyma	4	1.33	1	0.33		
04	Urogenital	Abortion	0	0	6	2	4	17
		Anestrus	0	0	23	7.67		
		Urolithiasis	12	4	0	0		
		Mastitis	0	0	22	7.33		
05	Respiratory	Pneumonia	8	2.67	6	2	6	4
		Contagious bovine pleuro-pneumonia	3	1	1	0.33		
		PPR	7	2.33	5	1.67		

06	Nervous	Rabies	1	0.33	0	0	2	1
		Gid diseases	5	1.67	3	1		
07	Sense organ	Keratoconjunctivitis	6	2	2	0.67	2.67	1
		Eye worm infestation	2	0.67	1	0.33		
08	Circulatory	Anaplasmosis	3	1	2	0.67	1	0.67
Total			138	46%	162	54%	46%	54%

3.3. *Age wise clinical prevalence of diseases and disorders in goats*

The Gastrointestinal problems (Acidosis, simple indigestion, enterotoxaemia, worm infestation, coccidiosis), Musculoskeletal problems (Tetanus, black leg, foot rot, myiasis, Polioencephalomalacia), Integumentary problems (Dermatophytosis, Mange, Lice infestation, Contagious ecthyma), Urogenital problems (Abortion, anestrus, urolithiasis, mastitis), Respiratory problems (Pneumonia, contagious bovine pleuro-pneumonia, PPR) , Nervous Problems (Rabies, gid diseases), Sense organ problems (Keratoconjunctivitis, eye worm infestation), Circulatory (Anaplasmosis) were recorded in both young and Adult goat (Table-3). And it turns out that adult goat are more vulnerable than young goat.

Table 3: Age wise clinical prevalence of diseases and disorders in goats at the upazila veterinary hospital, Rangpur sadar, Rangpur (N=300)

Sl. No.	System involvement	Diseases	Young(<1 year)		Adult(>1 year)		Total (%)	
			No. of affected	Percentage (%)	No. of affected	Percentage (%)	Young	Adult
01	Gastrointestinal	Acidosis	4	1.33	8	2.67	13	10.67
		Simple indigestion	9	3	7	2.33		
		Enterotoxaemia	2	0.67	0	0		
		Worm infestation	20	6.67	12	4		
		Coccidiosis	4	1.33	5	1.66		
02	Musculoskeletal	Tetanus	3	1	0	0	8.33	10.66
		Black leg	0	0	2	0.67		
		Foot Rot	13	4.33	12	4		
		Myiasis	7	2.33	14	4.67		
		Polioencephalomalacia	2	0.67	4	1.33		
03	Integumentary	Dermatophytosis	7	2.34	6	2	6	12
		Mange	3	1	16	5.33		
		Lice infestation	6	2	11	3.67		
		Contagious ecthyma	2	0.67	3	1		
04	Urogenital	Abortion	0	0	6	2	1	20
		Anestrus	0	0	23	7.67		
		Urolithiasis	3	1	9	3		
		Mastitis	0	0	22	7.33		

05	Respiratory	Pneumonia	12	4	2	0.66	6.33	3.66
		Contagious bovine pleuro-pneumonia	4	1.34	0	0		
		PPR	3	1	9	3		
06	Nervous	Rabies	0	0	1	0.33	0.33	2.67
		Gid diseases	1	0.33	7	2.33		
07	Sense organ	Keratoconjunctivitis	3	1	5	1.67	1.33	2.34
		Eye worm infestation	1	0.33	2	0.67		
08	Circulatory	Anaplasmosis	1	0.33	4	1.33	0.33	1.33
Total			110	36.67	190	63.33	36.67	63.33

3.4. *Clinical Prevalence of disease and disorders in Cattle*

A total of 21 diseases and disorders were enrolled from 250 Cattles delivered for treatment to a veterinary hospital during the study period. Among the 250 cases, 57 (22.8%), 80 (32%), 59 (23.6%), 36 (14.4), 16 (6.4%), 2(0.8%) were recorded in Gastrointestinal problems (Acidosis, bloat, worm infestation, coccidiosis), Musculoskeletal problems (Epimeral fever, FMD, myiasis, naval ill, lumpy skin diseases), Urogenital problems (Mastitis, abortion, anestrus, retained placenta), Integumentary problems (Wart, ring , hoof injury, Lice infestation), Sense organ problems (eye worm infestation, Keratoconjunctivitis), Nervous Problems (Rabies) in cattle (Table-4)

Table 4: Clinical prevalence of diseases and disorders in cattle at the upazila veterinary hospital, Rangpur sadar, Rangpur (N=250)

Sl. No.	System Involvement	Diseases	No. of affected	Percentage (%)	Total (%)
01	Gastrointestinal	Acidosis	13	5.2	22.8
		Bloat	11	4.4	
		Worm infestation	29	11.6	
		Coccidiosis	4	1.6	
02	Musculoskeletal	Epimeral fever	21	8.4	32
		FMD	12	4.8	
		Myiasis	8	3.2	
		Naval ill	7	2.8	
		Lumpy skin diseases	32	12.8	
03	Urogenital	Mastitis	24	9.6	23.6
		Anestrus	18	7.2	
		Abortion	5	2	
		Retained placenta	12	4.8	
04	Integumentary	Warts	6	2.4	14.4
		Ringworm	11	4.4	
		Hoof injury	4	1.6	
		Lice infestation	15	6	
05	Sense organ	Eye worm infestation	3	1.2	6.4
		Keratoconjunctivitis	13	5.2	
06	Nervous	Rabies	2	0.8	0.8
Total			250	100	100

3.5. *Sex wise comparison of clinical prevalence of diseases and disorders in male and female Cattle*

The comparative clinical prevalence of diseases and disorders in male and female Cattles are presented in Table 5. And it turns out that female are more vulnerable than male.

Table 5: Comparative clinical prevalence of male and female cattle at upazila veterinary hospital, Rangpur sadar, Rangpur (N=250)

Sl. No.	System Involvement	Diseases	Male		Female		Total	
			No. of affected	(%)	No. of affected	(%)	Male	Female
01	Gastrointestinal	Acidosis	6	2.4	7	2.8	11.6	11.2
		Bloat	8	3.2	3	1.2		
		Worm infestation	12	4.8	17	6.8		
		Coccidiosis	3	1.2	1	0.4		
02	Musculoskeletal	Epimeral fever	8	3.2	13	5.2	14.8	17.2
		FMD	9	3.6	3	1.2		
		Myiasis	2	0.8	6	2.4		
		Naval ill	3	1.2	4	1.6		
		Lumpy skin diseases	15	6	17	6.8		
03	Urogenital	Mastitis	0	0	24	9.6	0	23.6
		Anestrus	0	0	18	7.2		
		Abortion	0	0	5	2		
		Retained placenta	0	0	12	4.8		

04	Integumentary	Warts	5	2	1	0.4	10.8	3.6
		Ringworm	9	3.6	2	0.8		
		Hoof injury	1	0.4	3	1.2		
		Lice infestation	12	4.8	3	1.2		
05	Sense organ	Eye worm infestation	2	0.8	1	0.4	4.4	2
		Keratoconjunctivitis	9	3.6	4	1.6		
06	Nervous	Rabies	0	0	2	0.8	0	0.8
Total			104	41.6	146	58.4	41.6	58.4

3.6. *Age wise clinical prevalence of diseases and disorders in Cattle*

The Gastrointestinal problems (Acidosis, bloat, worm infestation, coccidiosis) Musculoskeletal problems (Epimeral fever, FMD, myiasis, lumpy skin diseases), Urogenital problems (Mastitis, abortion, anestrus, retain placenta), Integumentary problems (Wart, ringworm, hoof injury, Lice infestation), Sense organ problems (eye worm infestation, Keratoconjunctivitis), Nervous Problems (Rabies) were recorded in both young and adult in Cattle. And it turns out that young cattle are more vulnerable than adult cattle.

Table 6: Age wise clinical prevalence of diseases and disorder in Cattle at the upazila veterinary hospital, Rangpur sadar, Rangpur (N=250)

Sl. No.	System Involvement	Diseases	Young (<2Yrs)		Adult (>2Yrs)		Total (%)	
			No. of affected	(%)	No. of affected	(%)	Young	Adult
01	Gastrointestinal	Acidosis	4	1.6	9	3.6	11.6	11.2
		Bloat	5	2	6	2.4		
		Worm infestation	18	7.2	11	4.4		
		Coccidiosis	2	0.8	2	0.8		
02	Musculoskeletal	Epimeral fever	13	5.2	8	3.2	20	12
		FMD	5	2	7	2.8		
		Myiasis	6	2.4	2	0.8		
		Naval ill	7	2.8	0	0		
		Lumpy skin diseases	19	7.6	13	5.2		
03	Urogenital	Mastitis	5	2	19	7.6	10	13.6
		Anestrus	10	4	8	3.2		
		Abortion	1	0.4	4	1.6		
		Retained placenta	9	3.6	3	1.2		
04	Integumentary	Warts	4	1.6	2	0.8	6.8	7.6
		Ringworm	9	3.6	2	0.8		
		Hoof injury	1	0.4	3	1.2		
		Lice infestation	3	1.2	12	4.8		
05	Sense organ	Eye worm infestation	1	0.4	2	0.8	4	2.4
		Keratoconjunctivitis	9	3.6	4	1.6		

06	Nervous	Rabies	2	0.8	0	0	0.8	0
Total			133	53.2	117	46.8	53.2	46.8

Chapter IV: Discussion

4.1. *Clinical Prevalence of diseases and disorders in Goats*

A total of 25 diseases and disorders were enrolled from 300 goats delivered for treatment to a veterinary hospital during the study period. Among the 300 cases, 71(23.67%) were recorded in Gastrointestinal disorders including Acidosis 12(4%), simple indigestion 16(5.33%), enterotoxaemia 2(0.67%), worm infestation 32(10.67%), coccidiosis 9(3%) respectively in goats. In case of gastrointestinal disorders young and female are more susceptible than adult and male goats. A study was conducted by (Sarder et al., 2015) where gastrointestinal disorders in goat was 13.9%. Another study was conducted by (Islam et al., 2015) where digestive disorders was (11.81%). (Uddin et al., 2020) reported the clinical incidence of 6.98% digestive disorders in goat at Pabna district. Other that A study was conducted by (Lucky et al., 2016) where digestive diseases and worm infestation in goat was 21.88% and 26.58%. A gastrointestinal disorder depends on different factor such as deworming practices, source of water, housing, feeding and management.

Among the 300 cases, 57(19%) were recorded in musculoskeletal problems including Tetanus 3(1%), blackleg 2(0.67%), foot rot 25(8.33%), myiasis 21(7%), Polioencephalomalacia 6(2%) respectively in goat. In that case male and adult goats are more susceptible than female and young goats. A study was conducted by (Sarder et al., 2015) in Northern Barind Tract where musculoskeletal problems was 2.6%. (Sardar et al., 2006) reported that tetanus, foot rot was (0.60%), (1.29%) respectively in goat. (Lucky et al., 2016) also reported that myiasis, foot rot in goats was (28.30%), (17.64%) respectively. Tetanus (0.29%) was reported by (Uddin et al., 2020) in goats.

Among the 300 cases 54(18%) were recorded in Integumentary problems including Dermatophytosis 13 (4.33%), Mange 19 (6.33%), Lice infestation 17 (5.67%), Contagious etyma 5(1.67%) respectively in goat. In this case male and adult goats are more susceptible than female and young goats. A study was conducted by (Sarder et al., 2015) where Integumentary problems were 3.5% in goats. (Lucky et al., 2016) reported that the lice infestation in goats was 7% which is nearer to my conducted study. Mange 3.89% was reported by (Alam et al., 2015) in goats.

Among the 300 cases 63(21%) were recorded in urogenital problems including Abortion 6(2%), anestrous 23(7.67%), urolithiasis 12(4%), mastitis 22(7.33%) respectively in goat. In this cases female and adult are more susceptible than male and young goats. (Sarder et al., 2015) reported that (6.9%) urogenital problems in goat Northern Barind Tract . (Sardar et al., 2006) reported that (2.15%) mastitis problem in goat in Savar upazila. Another study was conducted by (Meher et al., 2021) where reproductive problems in goat was 25% in goat in Pabna. Abortion (12.5%), anestrous (31.25%) was reported by (Lucky et al., 2016) in goats in Sylhet.

Among the 300 cases 30(10%) were recorded in respiratory problems including Pneumonia 14(4.67%), contagious bovine pleuro-pneumonia 4(1.33%), PPR 12(4%) respectively in goat. In case of respiratory problems young and male are more susceptible than adult and female goats. (Sarder et al., 2015) reported that respiratory problems was (12.3%) in goat in Northern Barind Tract. (Karim et al., 2014) reported that (9.5%) respiratory problems were found in goats. Another study was conducted by (Sarker et al., 2015) where PPR (5.16%), pneumonia and pneumonitis (4.11%) were found in goat.

Among the 300 cases 9(3%) were recorded in nervous problems including Rabies 1(0.33%), gid diseases 8(2.675%) respectively in goat. In this cases male and adult are more susceptible than female and young goat. (Alam et al., 2015) reported that rabies (0.81%) and gid diseases (0.41%) were found in goat. (Sardar et al., 2006) reported that rabies (0.11%) and gid diseases (0.94%) in young goats.

Among the 300 cases 11(3.67%) were recorded in sense organ problems including keratoconjunctivitis 8(2.67%), eye worm infestation 3(1%) respectively in goat. In these cases male and adult goats are more susceptible than female and young goat. A study was conducted by (Sarder et al., 2015) where sense organ problems was (2.9%) in goat. (Sardar et al., 2006) reported that (1.61%) conjunctivitis in adult goat. another study was conducted by (Uddin et al., 2020) where eye infection was (0.49%) in goats.

Among the 300 cases 5(1.66%) were recorded in Circulatory problems including Anaplasmosis 5(1.66%) in goat. Male and adult are more susceptible than female and young goat. (Bashar et al., 2020) reported that (12%) anaplasmosis was recorded in goats.

4.2. *Clinical Prevalence of disease and disorders in Cattle*

A total of 21 diseases and disorders were enrolled from 250 Cattles delivered for treatment to a veterinary hospital during the study period. Among the 250 cases, 57 (22.8%) were recorded in Gastrointestinal disorders including acidosis 13(5.2%), bloat 11(4.4%), worm infestation 29(11.6%), coccidiosis 4(1.6%) respectively in cattle. In the gastrointestinal disorders female and young are more susceptible than male and adult cattle. (Badruzzaman et al., 2015) reported that the digestive disorders in cattle were (45.14%). (Kabir et al., 2010) reported that the digestive disorders in cattle were (11.5%). A study was conducted by (Lucky et al., 2016) where the Acidosis ,bloat, worm infestation was (14.87%), (23.64%), (30.61%) respectively in cattle. (Uddin et al., 2020) reported that digestive disorders and worm infestation was (6.98%) and (46.71%) in cattle. A gastrointestinal disorder depends on different factor such as deworming practices, source of water, housing, feeding and management.

Among the 250 cases, 80(32%), were recorded in Musculoskeletal problems including Epimeral fever 21(8.4%), FMD 12(4.8%), myiasis 8(3.2%), naval ill 7(2.8%), lumpy skin diseases 32(12.8%) respectively in cattle. (Rimon et al., 2018) reported that epimeral fever, FMD, myiasis was (0.27%), (4.74%), (8.11%) respectively in cattle. (Kabir et al., 2010) reported that FMD in cattle was (35.92%). A study was conducted by (Lucky et al., 2016) where FMD, myiasis in cattle was (38.62%), (17.01%) respectively. (Hasib et al., 2021) reported that the clinical prevalence of LSD in the study population was 10% in Chattogram.

Among the 250 cases, 59 (23.6%) were recorded in Urogenital problems including Mastitis 24(9.6%), abortion 5(2%), anestrus 18(7.2%), retained placenta 12(4.8%) respectively in cattle. Female and adult are more vulnerable than young.(Lucky et al., 2016) reported that the mastitis, abortion, anestrus and retain placenta was (40%), (7.06%), (23.52%) and (4.71%) respectively in Adult cattle. A study was conducted by (Uddin et al., 2020) where reproductive disorders in cattle was (1.38%). (Kabir et al., 2010) reported that reproductive disorders was (6.03%) in cattle. (Sen et al., 2018) reported that the gynaeco-obstetrical problems in cattle were 5.71% at Sylhet. Another study was conducted by (Rimon et al., 2018) where reproductive problems were 16.85% in adult cattle at Thakurgaon.

Among the 250 cases, 36 (14.4%) were recorded in Integumentary problems including Wart 6(2.4%), ring worm 11(4.4%), hoof injury 4(1.6%), Lice infestation 15(6%) respectively in cattle. The male and adult goats are more vulnerable than female and young goat. (Kabir et al., 2010) reported that the skin diseases was (6.60%) in cattle. (Lucky et al., 2016) reported that the wart and lice infestation was (6.80%) and (10.20%) respectively in cattle. Integumentary problems depend on available vectors, environment condition and management.

Among the 250 cases, 16 (6.4%) were recorded in Sense organ problems including eye worm infestation 3(1.2%), Keratoconjunctivitis 13(5.2%) respectively in cattle. In the case male and adult are more susceptible than female and young. (Uddin et al., 2020) reported that eye infection in cattle was (0.49%). (Parvez et al., 2014) reported that the eye infection in cattle was (2.05%). Another study was conducted by (Karim et al., 2014) where sense organ problems were (3.99%) in cattle.

Among the 250 cases, 2(0.8%) were recorded in nervous problems including rabies (0.8%) in cattle. Female and young are more susceptible than male and adult. (Lucky et al., 2016) reported that the rabies case in cattle was (20.06%) in Sylhet area. Another study was conducted by (Badruzzaman et al., 2015) where the clinical prevalence of rabies in cattle was (0.12%).

Chapter V: Limitations

- The number of clinical cases in this study was relatively small (550 cases).
- Some diseases were not diagnosed by laboratory test.
- Clinical signs basically were used to diagnose the case definition.
- Every case could not be followed up for looking treatment response.

Chapter VI: Conclusion and Recommendations

This study was conducted to investigate the present situation of clinical diseases and disorder of animal. Goat, cattle are most susceptible to gastrointestinal problems, urogenital problems and other diseases respectively. This may be due to alluvial, barren soil and temperate environment where intermediate host for parasitic infestation are available and the farmers are not aware about the anthelmintic treatment of animal. The contagious disease like lumpy skin diseases (LSD) was out broken in this area. Therefore, restriction of movement and vaccination is necessary to control these types of diseases. The study showed that worm infestation, foot rot, anestrus, epidermal fever, mastitis are predominantly present. Necessary biological security measures should be taken to prevent seasonal exposure of livestock to infectious diseases. Therefore, proper feeding, care and regular anthelmintic treatment are essential to maximize the yield of rural livestock. The knowledge gained through this study will increase our understanding of animal clinical practices in specific fields and take necessary preventive measures against the disease at the national policy level. Appropriate plans and programs must be put in place to prevent and control diseases and disorders.

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Biography

This is A.T.M. Mehedi Hasan, Son of Md. Abu Bakar Siddique and Most. Momotaj Begum was born on November 30, 1997 at Mithapukur Upazila, Rangpur. I passed my Secondary School Certificate (SSC) Examination in 2012 (GPA-5.00) followed by Higher Secondary Certificate (HSC) Examination in 2014 (GPA-5.00) from Dinajpur Board. I am now enrolled in year-long internship programme for completion of Doctor of Veterinary medicine in Chattogram Veterinary and Animal Sciences University (CVASU), Chattogram, Bangladesh. In future I would like to do Research work about animal welfare, epidemiological study and Zoonotic diseases those take public health significance in the world regarding one health constitution.