

# Comparative Study on the Behavioural Patterns of Different Breeds of dogs

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**Abstract-** Ethology the scientific study of animal behaviour is an interesting field of biology. Basic animal instincts like predation, mating, aggression, migration and many more, that occurs in their natural condition can be explained on the basis of behavioural studies. A basic understanding in ethology helps to understand animal emotions and to work towards their progress and wellbeing. The study was conducted for a period of one year. A total of seven different dog breeds were selected to conduct the study and their behavioural pattern were closely monitored. Different research works, articles and internet facilities were used to gain a general idea.

**Index terms-** Behaviour, Loyal, Dog, Human, Breed

## INTRODUCTION

The friendship between man and dog is as old as time. The loyalty and the unbreakable bond between dog and man is something to be discussed about. Whole world is familiar with 'Hachiko', the dog that waited years for its master to return. So here arises the basic question. 'Why dogs are loyal?'. Studies conducted on dogs revealed that when they interact with human they experience a surge of oxytocin level.<sup>1</sup> Isn't it obvious that oxytocin is also known as the 'love hormone'?

Domestication of animals is considered to be a milestone transition in human history. And it is certain that dogs were the first vertebrate to be domesticated. The exact time period regarding domestication of dogs is uncertain. Speculations based on different studies came into light. Some suggests the process happened around 15,000 years while other works suggest around 18,800-32,000 years back. Even though considerations arise regarding the exact time period of domestication of dogs, it was established that they begin to co-habit with human around 12,000 years back. This domestication has a huge effect in shaping dogs mind to understand and to let communicate with human<sup>2</sup>. Digging into the past genetic line of dogs, *Canis lupus familiaris* belongs to the family Canidae, sub species of the Gray Wolf. Tracing millions of years back, 'Miasis' served as the ancestor of modern-day canids which later evolved into 'Cynodictis' and later 'Tomoractus'<sup>3</sup>. Modern dogs are considered to be direct descendants of Gray Wolf. Dogs are classified into breeds and further into groups based on size, shape etc. The World Canine Organisation has classified dogs into ten different groups: Sheep dogs and Cattle dogs, Dachshunds, Scent hounds and relative breeds, Pointers and Setters, Spitz and Primitive types, Terriers, Pinscher and Swiss Mountain dogs, Retrievers and Flushing dogs, Companion dogs and Sight hounds<sup>4</sup>.

There exist certain reasons that determines dog behaviour. Three factors have been found to form the very basic reason behind this. 'Genetics, Present Environment and Past Learning and Experience'. Genetics forms the basic factor that determines dog behaviour. It can either be inherited from parents or due to selective breeding by human. The surrounding where a dog live has a huge effect on shaping their cognitive mind. This means emotions like pleasure and stress affects them equally just like human and that being mentally and physically. Dogs have an excellence sense of memory and they try to process the outcomes of various situations. If one finds out previous action resulted favourable outcome, tendency to promote such behaviour will be high.

Conducting studies on puppies is important in revealing behaviour process. Lack of socialisation in puppies may lead to fear or aggression related problems in future. Puppies when socialised were more likely to adopt an interactive conflict resolution strategy<sup>5</sup>. Dog behaviour is responses that is internally coordinated to various stimuli. Being in contact with human for ages, they are capable of understanding human language and signs<sup>6</sup>. Social cognitive abilities in dogs include Intelligence, Senses, Communication Behaviour and Social Behaviour. They also exhibit numerous behavioural problems like Jealousy, Separation Anxiety, Noise Anxiety, Tail Chasing and Attacks. Each breed exhibits some sort of unique behavioural pattern which is common to a specific group. Their services are utilised in fields like hunting, herding, rescue purpose and so on. Dogs show 'neophilia'- a desire for novelty. Studies conducted shows that in 38 out of 50 test they have a strong preference for novel items over familiar ones. This may be a trait that helps dogs adapt towards man<sup>7</sup>. Loyalty is a key factor that bring different breeds together. Their sense of loyalty can be clubbed with their shared lineage with Wolf species. Wolf is renowned as pack animals. Loyalty is the key feature of a pack.

Since human provide with food and shelter, dogs remain loyal to us. It forms their basic survival instinct. Trusting so much would explain why they put their life in danger just to protect their owner.

## II.RELEVANCE OF STUDY

Since the popularity for dogs is rising day by day, it is at most important to have knowledge about their behavioural pattern. Their services are utilised in various fields and a basic understanding about their demeanour helps to handle them smoothly. Seeing the world from dog's perspective enhances the relationship between human and dog. It opens an insight into dog's mind making us a great caregiver and companion to them. It is important to keep ourselves, other people and dog safe from any form of behavioural issues and to build a strong and healthy relationship with dogs.

## III.METHODOLOGY

**Study Area-** The site selected for the behavioural study of different breeds of dogs were from various areas in Ernakulam district.

**Method-** The study of behavioural pattern in different breeds of dogs were carried out for a period of 12 months August 2020 to August 2021. A total of seven breeds: Golden Retriever, Labrador Retriever, German Shepherd, Great Dane, Siberian Husky, Shih Tzu and Indian Stray dog were selected. Behavioural patterns focused specially on the feeding, reaction to the strangers, kids etc. of the dogs were studied carefully. Expert opinions, reference books, internet facilities were also used. The collected data was compiled and subjected to study.

## IV.OBSERVATION & RESULTS

The project on 'Comparative Study on the Behavioural Patterns of Different Breeds of Dogs' has been completed in one year. Seven different dog breeds were subjected to study. A total of 25 different attributes were carefully observed and recorded. The following table shows the recorded results.

Behaviours observed	Golden Retriever	Labrador Retriever	German Shepherd	Great Dane
Adaptability	Shows well adaptability to changes and environmental conditions.	Shows well adaptability to changes and environmental conditions. One of the most adaptable compared to others.	Shows well adaptability to changes and environmental conditions. Home with large yard is preferred.	Shows average adaptability to changes and environmental conditions. Due to large size large space is required.
Dog friendliness	Very friendly with other dogs.	Very friendly with other dogs.	Not much friendly with other dogs.	Extremely friendly with other dogs.
Cat friendliness	Very friendly with cats.	Very friendly with cats.	Friendly with cats if properly introduced.	Friendly with cats if properly introduced.

Child friendliness	Very friendly with children.	One of the best friendly with children.	Very friendly with children.	Very friendly with children.
Stranger friendliness	Quite friendly with strangers.	Quite friendly with strangers.	Friendly with strangers but seems to be alert.	Average friendly to strangers. Takes time to mingle with strangers.
Climate preference	Tolerates warm and cold conditions.	Tolerates warm and cold conditions.	Tolerates warm and cold conditions. Shows difficulties during extreme warm conditions.	Tolerates weather conditions. Shows difficulties in winter season.
Sleeping needs	Requires 2-3 hours of sleep. Do not sleep much.	Sleeps for about 12 hours. Loves sleeping.	Sleeps for 10 hours. However working or active dogs tends to sleep less.	Sleeps approximately 12 hours a day. Does sleeps much.
Barking tendency	Rarely barks and have high vocals.	Barks occasionally.	Average barking tendency and have high vocals.	Barks frequently and shows high vocals.
Separation anxiety	Shows high separation anxiety if separated for too long.	Shows highest separation anxiety when compared with other breeds.	Shows separation anxiety.	Prone to separation anxiety and leads to destruction.

Guard dog ability	Below than average.	Average ability.	One of the best due to their braveness and alertness.	Shows good guard dog ability.
Energy level	Shows high energy level.	Shows high energy level.	Shows high energy level.	Shows high energy level.
Affection	Shows high affection. One of ideal dogs for families. They are loyal and gentle.	One of the most affectionate and loyal towards its master.	Shows high affection and is loyal breed.	Shows high affection. Extremely loyal, lovable, gentle and ideal breed.
Mouthing tendency	Shows much strong tendency of chewing, play biting and nipping.	Shows strong tendency of chewing, play biting and nipping.	Shows tendency of chewing, play biting and nipping. Prefers to play.	Shows tendencies like licking, chewing and nipping. But can bite strangers.
Drooling	High tendency of drooling.	Average tendency of drooling.	Much lower tendency of drooling.	Extremely high tendency of drooling.
Prey drive	One of the few breeds that shows low level of prey drive.	Being traditionally hunting dogs, they show high prey drive.	Shows dominant character and hence tend to show high prey drive.	Does not exhibit high prey drive. Can be average or extremely low.

Temperament	Trustworthy, intelligent, kind, friendly, reliable and confident.	Intelligent, outgoing, even tempered, kind, agile, gentle and trustworthy.	Intelligent, stubborn, loyal, obedient, alert, watchful, confident, curious and courageous.	Friendly, devoted, reserved, confident, loving and gentle.
Jealousy	Gets easily jealous.	Overly protective breed towards master and hence become high jealous.	Found to show high jealousy.	Can get super easily jealous.
Noise anxiety	Don't like noise and is highly sensitive to noise.	Highly sensitive to noise.	Highly sensitive to noise when compared with others.	Lower than average and can tolerate noise.
Tameness	They can be trained quite easily since they were hunting dogs.	Always eager to please their owner and hence can be tamed easily.	Can be trained very easily and are quick learners.	Not much easy to train and is considered average.
Dominance	Does not exhibit dominant character and goes well with other dogs.	Does not exhibit dominant character.	Shows dominance because they are extremely territorial.	Shows average dominance.
Biting potential	Low chance of biting others.	Extremely low chance of biting others.	More likely to bite others.	More likely to bite others.

Territoriality	Not highly territorial.	Shows average territoriality.	Highly territorial breed.	Extremely territorial and highly protective of their own property.
Food consumption	On average, they eat between 2 and 3 cups of twice a day.	2-3 ½ cups of food twice a day.	3-4 cups of high-quality food twice a day.	Being one of the largest dog breeds, they require about 8-10 cups of twice a day.
Response to food	Shows positive response to almost all kind of food.	They love to eat a lot and thus shows positive response to all kind of food.	They are highly food motivated breed. But they are at high risk of developing food hypersensitivity.	Shows positive response to all forms of food but sometimes shows negative response too.
Food priority	Since these dogs are active, at least 30% amount of protein is required. They need more protein to maintain their muscular bodies as compared to other dog breeds. 12-18% fat should be included in diet. Omega-6 and omega-6 fatty acid in diet add shine and gloss to fur. Carbs need to be adjusted according to its activity and age. Must contain a minimum of 30-35% carbs.	The best diet is a protein rich high-quality diet consisting of 18-22% protein. Recommended fat content is about 5%. Senior dogs may need 20% fewer calories than middle aged dogs. They can eat a range of food that are perfectly safe and healthy. These include proteins such as beef, lamb, pork and chicken; grains such as wheat, oats, corn and rice; dairy such as yogurt and cheese; and fruits and vegetables such as apples, berries, carrots and peas. Nuts are not recommended.	The best type of food for German Shepherd is dry food. The best diet is a high-quality protein rich diet consisting of 18-22% protein. They can also derive nutrients from grains, fruits and vegetables. Mainly prefers non-veg food items like egg, meat, fish etc.	As it is a giant dog, care must be taken that there are no nutritional deficiencies: it would pay for its bone development and more. As an adult, needs more than 1 kilo of food per day. Meat, fish, cereals, eggs, milk and derivatives should be included in the diet. As carbohydrates better rice is preferred. Vegetable should comprise about 10% of the daily ration and cooked would be more digestible. Seasonal fruits can also be given. Normally veterinarian recommend at least 23% of protein and 12% if fat in their diet. Biscuits and milk is more preferred by them.

Behaviours observed	Siberian Huskey	Shih Tzu	Indian Stray Dog
Adaptability	Fairly adaptable to changes and environmental conditions but requires time. They require space.	Shows well adaptation to changes and environmental conditions.	Shows well adaptation to changes and all environmental conditions. One of the most adaptable.
Dog friendliness	Being accustomed to living in packs, they are compactable with other dogs.	Very friendly with other dogs.	Friendly with other dogs.
Cat friendliness	Not friendly with cats.	Friendly with cats.	Friendly with cats.
Child friendliness	Friendly with children.	Exceptionally friendly with children.	Very friendly with children.
Stranger friendliness	Usually very friendly with strangers.	Friendly with strangers.	Average friendly with strangers.
Climate preference	Cold condition is preferred. Cannot withstand heat.	Can tolerate cold climate but cannot withstand hot climatic conditions.	Can tolerate both hot and cold climate.

Sleeping needs	Sleeps around 15 hours a day.	Sleeps for a longer period of time if left alone. Usually for around 16-20 hours.	It depends. Sometimes less or sometimes more.
Barking tendency	Rarely barks. They would much rather howl with high vocals.	Prone to barking and low vocals.	More than average and high vocals.
Separation anxiety	Shows separation anxiety when left alone and causes trouble.	Exhibits separation anxiety and may even develop depression when left unattended for long time.	They can adapt well to the changes. Some may show separation anxiety.
Guard dog ability	Don't make good guard dogs due to friendly and non-aggressive temperaments.	Not a good option as guard dog.	They are excellent guard dogs.
Energy level	Shows high energy level as they are working dogs.	Shows average energy level and needs exercises.	Shows very high energy level.
Affection	Shows high affection. They are good natured and get along with people.	Very affectionate and are loyal. Usually seems to be one person dog.	Show high affection and are loyal, generous and intelligent. Best breed for families.



Mouthing tendency	Shows strong tendency to nip, lick and play bite.	Shows tendencies to nip, lick and play bite.	Shows strong tendency to nip, lick and play bite.
Drooling	Extremely low tendency of drooling.	Extremely low tendency of drooling.	Low tendency of drooling.
Prey drive	Shows extremely high prey drive due to their hunting instinct.	Shows minimal prey drive since they are companion dogs.	Shows prey drive. But may vary.
Temperament	Intelligent, outgoing, friendly, alert and gentle.	Playful, clever, affectionate, spunky, intelligent, outgoing, friendly, loyal, lively, happy, active, gentle, alert, independent and courageous.	Alert, brave, intelligent, obedient and curious.
Jealousy	They are highly jealous and demands for undivided attention.	Shows jealousy as they seem to be one person dog.	Can adapt well to any situation and thus they show low level of jealousy.
Noise anxiety	Highly prone to noises and causes anxiety.	Does not like noises.	Can tolerate noise.

Tameness	They are hard to train because of their pack instincts.	They can be trained easily because they love to learn new things.	They are quite easy to train as they are able to understand signs more easily.
Dominance	Males tend to show dominance due to their pack instinct.	Does not possess dominant traits and are easy going.	Does not show dominant behaviour.
Biting potential	Low chances of biting others.	Average chances of biting especially in pup stage.	Low to high chances of biting others.
Territoriality	Extremely territorial and will challenge other that come into their domain.	Highly territorial.	Average territorial.
Food consumption	Normally 2-3 cups of food twice a day.	$\frac{3}{4}$ -2 cups of food thrice a day.	1-2 cups of food twice a day.
Response to food	Shows negative response to food. They are very picky eaters. Gets bored if they eat same kind of food for long time.	They are picky eaters. Loves to eat sweet dishes.	Shows positive response to almost all food.

Food priority	Despite their large size, they don't require a heavy diet. But because they are working dogs, they certainly need a special diet. Eating habits of this dog are very different from other dogs. Unlike other dogs, Huskies keep an eye on the food intake and they are not greedy when it comes to food. Different meats such as lamb, fish and chicken are good sources of quality proteins. Vegetables should be fed for vitamins and nutrients. They are picky eaters.	Puppies requires 4-6 meals a day because they are susceptible to hypoglycemia. They are picky eaters because they have sensitive stomach. Best food for these dogs includes chicken, sweet potatoes, beef, pumpkin and lamb. They are more likely to get obese compared to other dog breeds. Therefore, it is ideal to avoid too much carbohydrate sources. They prefer more sweet food items. But this may lead to diabetic conditions.	Like most other canines, a bulk of Indian Pariah dog's diet must consist of meat-based proteins and fats. Since they are always full of energy, some carbs are needed to fuel their agility and activity. Their priority includes meat, fish and ice-cream.
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### Dog breeds selected for study



**Golden Retriever**



**Labrador Retriever**



**German Shepherd**



**Great Dane**



**Siberian Husky**



**Shih Tzu**



**Indian Stray Dog**

## **V.DISCUSSION**

Dogs come in various shapes and sizes. Likewise different breeds exhibit distinct breed typical personalities. It has been achieved by selection of traits for generations. By grouping dogs according to their work and were bred to do, there exist chances of determining their temperament. An important study to be noted that human perceive dog and human facial expressions alike. Whether it be pleasant to threatening, human find it similar to human facial expressions<sup>8</sup>. Certain traits are specific to certain breeds. Their breed specificity also determines how well a dog can adapt to its surroundings. Sports breeds are said to be more adventurous and have excellent sense of smell. Guard dogs seems to be more alert than others and shows territoriality. Working and herding dogs tends to be strong and are very sociable making them smart ones. Terriers, originally bred to catch rodents are very active and lively. Toy dogs are small ones. They are very adaptable and affectionate. Since dogs are subjected to high selection processes during domestication and breeding, they serve as excellent models to study animal behaviour<sup>9</sup>.

Out of the seven breeds subjected for the study there goes a general idea: Golden Retriever and Labrador Retriever belongs to hunting class. Being accustomed to, they have high energy and easy to tame. Shows high smelling and tracking ability and are excellent swimmers. They have good running shape as they used to run miles to catch prey. German Shepherd belongs to herding group. Their key trait being extremely loyal. They have highly built body and are alert and territorial. Great Dane and Siberian Husky belongs to working class. They are quite friendly with strangers and are more powerful and hence composed of larger dogs. They are independent and difficult to tame. Shih Tzu belongs to toy group. Including small one they constantly crave for attention. Shows high jealousy and doesn't show dominance or prey drive.

By recording their temperament differences, this paper suggests that it is important to know and act according to their behavioral differences to nurture them into better dogs.

## **VI. CONCLUSION**

About 25 attributes were subjected to studies and the following conclusion was made. All seven of them were very loyal towards their loved ones and exceptionally friendly towards children. 'Jealousy' which is a characteristic of human may also develop in dogs. By observing feeding pattern Siberian Husky was found to be quite unique. They showed low barking tendency and prefer to howl. German Shepherd and Great Dane seemed to be alert towards strangers making them good guard dogs. Sleeping needs were almost similar in selected breeds. An exception was Golden Retriever. Siberian Husky and Sih Tzu showed negative response to food making them picky eaters. Siberian Husky shows high dominance due to pack instincts and thus making them difficult to train. Drooling was found to be extreme in Great Dane due to facial composition. Indian Stray dog were highly immune and were able to adapt to extremities of conditions and easy to maintain. All showed signs of separation anxiety.

Study of behavioral pattern help to diagnose diseases, strange behaviour etc. Changes in their normal temperament may suggest any underlying disease conditions. Being man's best friend living closely with them helps to alleviate anxiety and depression. Proper socialization is must to teach them highly enriching experiences.

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