



Trainability and Boldness Behavior on Kintamani Dog in Indonesia

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ABSTRACT

This study aims to determine the trainability and boldness behavior of the Kintamani Dog from Indonesia. Boldness and trainability are good behaviors that are highly desirable to keep. This study using 30 Kintamani dogs aged 3-5 months. Data were collected directly through surveys and indirectly through questionnaires from Kintamani dog owners who are members of Kintamani Dog Clubs in Indonesia. Behavior data were collected using Canine Behavioral Assessment and Research Questionnaire (C-BARQ). Overall, the results of the eight questions on trainability had a high average score in this study. Furthermore, the results on aggression and fear showed a high score for boldness behavior. In conclusion, Kintamani dog in Indonesia has a high score on trainability and boldness behavior.

Key words: Aggression; Boldness; Dog Behavior; Fearfulness; Kintamani Dog; Trainability.

INTRODUCTION

Differences in behavior among groups of dogs can generally be explained by their historical function. A long time ago, dog breeds were bred for appearance and/or behavior (Sechi et al. 2017). Selective breeding aims to optimize the performance of the dog, focusing on the required functions and on some tasks (e.g., guarding, hunting, herding, and catching vermin) (Zink and Schlehr 2020), that necessitate a selection of morphology and behavior (Turcsán et al. 2011). In modern breeding practices, the breed standards become strict, thus making dog breeds morphologically homogenous. They were allowed to choose regarding the genetic basis of behavior diversity. Strong selective pressure for novel and certain desirable traits causes extraordinary phenotypic diversity (Vaysse et al. 2011). Behavioral traits have been the main target of selection for desirable breeds for hundreds of years. However, these behavioral traits play little attention to today's breed standards. This may explain why behavioral traits are different at the breed group level.

Genetic research has found genetic links among dog breeds that can be separated from their historical role and explain behavioral differences between breeds. The study of animal behavior can modify how animals are maintained and trained, improve animal welfare, and increase interactions between humans and animals (Starling et al. 2013; Rodriguez et al. 2021).

Trainability is defined as a dog's willingness to follow commands given by the owner with high motivation and resistance to reprimand and with minimal amount levels of distraction (Fattah and Abdel-Hamid 2020). Meanwhile, boldness behavior in dogs is characterized by easy training behavior, the willingness of dogs to interact with humans, and low reports of dog aggressiveness. Higher scores for boldness behavior have also been associated with higher trainability (Eken et al. 2015).

Breed differences in physical characteristics cannot be debated. These differences are undoubtedly related to the performance of agility, such as physical strength, jumping height, and running speed. However, the ability to be easily trained is still debated regarding the fitness of certain breeds, breed groups, or even dogs for various jobs (Helton 2010).

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The Kintamani dog in Indonesia is an emerging breed dog in Indonesia (Puja et al. 2018). The Kintamani dog is intelligent, gentle, and loyal to the family (Puja et al. 2005). The Kintamani dog is also easy to breed (Utomo et al. 2023). Because of those characteristics, the Kintamani dog is very famous among Indonesian people (Puja et al. 2019). The Federation Cynologique Internationale (FCI) has recognized the Kintamani dog as a world breed with a provisional category since February 2019 (Sulabda et al. 2022). In the FCI nomenclature, the Kintamani dog is included in group 5, namely Spitz and primitive types. According to FCI Classification, The Kintamani breed was grouped with the Spitz split, Chow Chow breeds, Thai Bangkaew, Thai Ridgeback, Shiba Inu, and Siberian Husky (Kriangwanich et al. 2020).

In Kintamani dogs, to our knowledge, there is no scientific literature reporting boldness and trainable data. Thus, there is a need to explore the behavior associated with boldness and trainability in Kintamani dogs. This study aimed to perform a preliminary exploration of the boldness and trainable behavior in Kintamani dogs using questionnaires.

MATERIALS AND METHODS

Ethical approval

This research procedure was approved with Approval number B/140/UN14.2.9/PT.01.04/2023 by the Animal Ethics Committee of the Faculty of Veterinary Medicine Udayana University.

Subject

This observational study is carried out by conducting surveys and questionnaires among breed owners. This study used 30 Kintamani dogs. The dogs were 3-5 months old and clinically appeared healthy. The Kintamani dog owners' addresses were obtained from the Kintamani dog clubs register throughout Indonesia, with kind help from Persatuan Kinologi Indonesia (PERKIN).

Procedure

This study's data collection method was carried out by surveying the Kintamani dog data from the Kintamani dog owners who are members of the Kintamani dog clubs in Indonesia. Behavior data in this research was collected using the Canine Behavioral Assessment and Research Questionnaire (C-BARQ) from dog owners (Clay et al. 2020). This questionnaire includes 16 questions asking owners to evaluate how their dogs respond to various events and common stimuli using a 0-4 rating scale. Subscale scores and various C-BARQ items have been shown to measure a dog's behavioral phenotype accurately. Each item was averaged and grouped into five categories as follows: 0 (Never); 1 (Seldom); 2 (Sometimes); 3 (Usually); 4 (Always). The category in this study was obtained from the C-BARQ questionnaire, where it is known that the minimum score on the ranking scale of this study is 0, and the maximum score is 4. Data collection is carried out directly and indirectly. Direct data collection was carried out through direct owner surveys and direct observation of the Kintamani dog located in Bali.

Meanwhile, indirect data collection was carried out by filling out a questionnaire via Google Forms.

Questionnaires were distributed online to owners of Kintamani dogs throughout Indonesia. Questionnaires were sent to 40 dog owners. Ten dogs were excluded from the sample for different reasons (dogs were reported to be sick, or dogs were reported to be more than five months old). Within two months, the questionnaire for 40 dogs was answered by the owner and returned via email or WhatsApp.

Statistical analysis

The data from the research results were analyzed descriptively using the IBM SPSS version 25.0 program.

RESULTS AND DISCUSSION

Kintamani dog Demographics

In this study, the questionnaires collected as primary data are 30 questionnaires for trainability variables (Table 1) and 25 for boldness behavior variables (Table 2). The same 25 respondents filled in the questionnaire on the trainability and boldness questionnaires, and the remaining five respondents only filled out the trainability questionnaire. All the scoring analysis results can be seen in Table 4 and 5.

Table 3 describes the location of the respondents. From 30 respondents, 17 (56.7%) live in Bali, two respondents (6.67%) are domiciled in Jakarta, three respondents (10%) live in Bandung, one respondent (3.33%) in Surabaya, five respondents in Solo (16.67%), and two respondents (6.7%) from other cities.

Trainability

Overall, the results of questions one to four show that 50% of the Kintamani dogs usually return immediately when called (Table 4). In contrast, off-leash, 33.3% of the Kintamani dogs always tend to obey a sit command immediately, 37% of the Kintamani dogs tend to immediately obey a stay command, and 43.3% of the Kintamani dogs tend to usually fetch or attempt to fetch balls, sticks and other objects given. These four questions indicate obedience to the commandments given by the owner. In addition, the four questions above are included in the basic commands for controlling dogs (Helton 2010). Dogs who attended obedience training were likelier to obey their owner's commands (Kobelt et al. 2003). Most of the Kintamani dogs have never attended formal training or were trained by their owner. However, even though many Kintamani dogs are not trained, the Kintamani dogs are still obedient. The obedience is probably due to how the dogs are cared for, such as always being kept close to their owners (Gunawan et al. 2012). The results of these four questions indicate that the Kintamani dog generally scores often and always, which indicates that overall, the Kintamani dog is a dog that is willing to obey orders and basic commands given by the owner.

In the fifth question, the Kintamani dogs scored between a scale of 1 (rarely) and 4 (always). However, 60% indicate that the Kintamani dog always acknowledges or listens closely to everything that the owner says or does. These results illustrate that the Kintamani dog tends to be responsive. Dogs that are easily trained are not easily distracted, respond positively to correction, fetch or retrieve objects, and tend to be fast learners (McGreevy et al. 2013).

Table 1: Number of Trainability Questionnaires

Questionnaire	Number
Trainability variable questionnaire (google form)	15
Trainability variable questionnaire (physical questionnaire)	15
Total	30

Table 2: Number of Boldness Questionnaires

Questionnaire	Number
Boldness variable questionnaire (google form)	10
Trainability variable questionnaire (physical questionnaire)	15
Total	25

Table 3: Respondent Location

Location	Number	Percentage
Bali	17	56.7
Jakarta	2	6.7
Bandung	3	10.0
Surabaya	1	3.3
Solo	5	16.7
Other	2	6.7
Total	30	100.0

In the sixth question, the Kintamani dog scored between a scale of 0 (never) and 4 (always). However, 40% indicated that the Kintamani dog was sometimes slow to respond to correction or punishment. Although the Kintamani has a slow response to correction or punishment, the Kintamani dog did not respond negatively when corrected or given punishment based on the first question of boldness behavior in this study. Training methods using painful punishment can negatively affect dog behavior, and negative reinforcement affects dog welfare and the physical and mental health of dogs (Ziv 2017; de Castro et al. 2020). Punishment has been proven to cause negative responses such as anxiety and fear. As a result, learning cannot run well. Furthermore, it was discovered that punishment can result in the broad repression of all behavior (Fernandes et al. 2017).

In the seventh question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 40% indicated that the Kintamani dog was seldom slow to learn new tricks or tasks. This question is related to the Kintamani dog's responsiveness to new things. Responsiveness to training can be characterized by quickly learning in new situations, enjoying work with people, playfulness, and overall reaction to the environment. In general, low training response indicated a lack of collaboration, responsiveness to training, or interest in the situation, and high training response indicated the opposite (McEvoy et al. 2022).

In the eighth question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 46.7% indicated that the Kintamani dog is usually distracted by interesting smells, sights, or sounds. Trainable dogs are not easily distracted. This can occur due to the age of the Kintamani dogs in this study (3-5 months), which is a relatively young age. Dogs that tend to be easily distracted might be explained by their relatively young age (Lazarowski et al. 2021).

Overall, the eight trainability questions had a high average score in this study. As explained in the literature review, dogs that are easily trained are tend to be fast learners, fetch or retrieve objects, respond positively to

correction, and not easily distracted. Highly trainable dogs also tended to be intelligent, fast learners, could "read people" well, and were obedient (McGreevy et al. 2013; Wallis et al. 2020). The Kintamani dogs scored relatively high in obeying orders given by the owner and responsiveness, which includes responding positively to corrections and punishments (even though slow at times) and learning new things. Although this study states that the Kintamani dog is often easily disturbed by sight, sound, or smell, this has been explained by the relation to age. Dog training experience is the most significant aspect of dog trainability. Furthermore, younger dogs are reportedly easier to train than older dogs (Lazarowski et al. 2021). Therefore, in this study, the Kintamani dog used as the sample was 3-5 months old. Based on the results obtained and previous studies that discuss dog behavior, in this study, the Kintamani dog in Indonesia has a trainable behavior.

Boldness

In the first question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 56% indicated that the Kintamani dog never showed any aggressiveness when corrected or verbally punished by the owner or family members (Table 5). In addition, in the second question, the Kintamani dogs' scores are on a scale of 0 (never), 2 (sometimes), and 4 (always). Moreover, 88% indicate that the Kintamani dog never showed any sign of aggression when being approached directly by the owner while eating. These two questions indicate that the Kintamani dog has low fearful behavior or aggressiveness towards the owner. However, the behavior scale remains at 0 (never) and 4 (always), which means Kintamani dogs still behave aggressively toward their owners. Aggression toward family members has likely been selected in all breeds since the dog was domesticated (Eken et al. 2015). Generally, dogs with a high risk of aggressive behavior toward their owner often seek attention (McGreevy et al. 2013). Intuitively, a person may not predict that the same dog that exhibits attachment behavior also exhibits aggressive behavior towards the owner. However, this attention-seeking behavior in C-BARQ includes being pushy and being jealous when attention is given to third parties. These are standard resource-guarding behaviors. Therefore, the relationship with owner-directed aggression may not be surprising. In addition, previous research has shown that dogs kept by owners who have owned a dog for the first time tend to have more aggressive behavior towards them compared to more experienced owners (Serpell and Duffy 2016). Most notably, the primitive and spitz breeds' attachment and attention-seeking scores differ from those of any other breed group with presumed modern European origins. In contrast, the other five breeds grouped with the spitz, and primitive type have lower attachment and attention-seeking scores as an adaptation for hunting (Tonoike et al. 2015). In addition, Breeds that appear to have relatively high scores for aggression are Rough Collie, Miniature Poodle (toy, miniature, and medium-sized), Miniature Schnauzer, and all breeds in the small to medium size range (Mikkola et al. 2021).

In the third question, the Kintamani dogs scored between a scale of 0 (never), 3 (usually), and 4 (always). However, 52% indicated that the Kintamani dog always

Table 4: Trainability analysis results

Code	Questions	N	Min	Max	Mean	Std. Dev
TR1	Returns immediately when called while off-leash	30	1	4	3.00	0.910
TR2	Obeys a sit command immediately	27	0	4	2.63	1.471
TR3	Obeys a stay command immediately	30	0	4	2.33	1.348
TR4	Will fetch or attempt to fetch sticks, balls, and other objects	30	0	4	2.43	1.431
TR5	Seems to attend to or listen closely to everything the owner says or does	30	1	4	3.43	0.817
TR6	Is slow to respond to correction or punishment	30	0	4	1.67	0.959
TR7	Is slow to learn new tricks or task	30	0	4	1.23	1.073
TR8	Is easily distracted by interesting sights, sounds, or smells	30	0	4	2.50	1.167
Valid N		27				
Total mean					2.40	

*TR = trainability

Table 5: Boldness Analysis Results

Code	Questions	N	Min	Max	Mean	Std. Dev
BL1	When verbally corrected or punished (scolded, shouted at, etc.) by you or a household member.	25	0	4	0.76	1.091
BL2	When approached directly by a household member while s/he is eating.	25	0	4	0.32	0.945
BL3	When strangers walk past your home while your dog is outside or in the yard.	25	0	4	2.80	1.658
BL4	When an unfamiliar person approaches you or another family member at home.	25	0	4	1.72	1.720
BL5	When unfamiliar persons visit your home.	25	0	4	0.68	1.180
BL6	When an unfamiliar person tries to touch or pet the dog.	25	0	4	1.08	1.470
BL7	When approached directly by an unfamiliar dog of the same or larger size.	25	0	4	0.80	1.190
BL8	When examined/treated by a veterinarian.	25	0	4	0.44	0.961
Valid N		25				
Total mean					1.07	

*BL = boldness

shows aggressiveness when strangers walk past the owner's house while the dog is outside. The Kintamani dog always tends to have signs of aggressiveness, which are supported by the results of research using C-BARQ conducted by Tonoike et al. (2015), stating that spitz and primitive-type dogs, as well as herding and hunting dogs, were significantly more aggressive towards strangers. However, the highest score for aggression towards strangers is shown by toy dogs compared to dogs in other groups. Further research on German Shepherd dogs revealed that increased aggressiveness in strangers was due to specific responses to strangers rather than increased general aggressiveness (Serpell and Duffy 2016).

In the fourth question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 44% indicated that the Kintamani dog never shows any aggressiveness signs when unfamiliar people approach owners or other family members at home. This is also supported by the explanation of the third question: Spitz and primitive-type dogs, as well as herding and hunting dogs, are significantly more aggressive towards strangers (Tonoike et al. 2015). However, there is also a statement that fearful and aggressive reactions toward humans were relatively low in the spitz and primitive breed groups, so it can be concluded that Kintamani dogs are not always aggressive toward strangers. This question states that dogs accompanying their owners may believe that an approaching stranger may either not be a threat or not yet a threat. Boldness behavior is related to two components: boldness behavior is related to threats in general, which are related to boldness behavior, and vigilance is related to specific threats (Uchida et al. 2019).

In the fifth question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 68% indicated that the Kintamani dog never shows signs of fear when strangers visit the owner's house. Moreover, the Kintamani dogs scored between 0 (never) and 4 (always)

on the sixth question. However, 60% indicated that the Kintamani dog never showed any fear when strangers tried to touch or pet the dog. These two questions illustrate that the Kintamani dog has a low behavior score regarding fear of strangers. Where aggressive behavior and fear of humans are relatively low in the spitz and primitive types, this is probably caused by domestication and causes the spitz and primitive types to maintain a low tendency of aggressive behavior and fear (Tonoike et al. 2015). As it is known, the Kintamani dog is a part of the Spitz and Primitive type groups, which may be the basis of why the Kintamani dog has a low behavior score regarding fear of strangers as a result of domestication.

In the seventh question, the Kintamani dogs scored between a scale of 0 (never) and 4 (always). However, 60% indicated that when approached directly by an unfamiliar dog of the same or larger size, the Kintamani dog never showed signs of fear. There are higher levels of aggression directed toward unfamiliar dogs than unfamiliar people (Mikkola et al. 2021). This pattern, however, is particularly breed specific. For example, the Dachshund showed the same aggression in dogs and humans, while the Pit Bull Terriers, Jack Russell Terriers, and Akitas showed greater aggression toward dogs. Literature that discusses dog-directed fear is still limited, but the overall score on this question shows a high score of 4 (always).

In the eighth question, the Kintamani dog scored between a scale of 0 (never), 1 (seldom), 2 (sometimes), and 4 (always). The scale is in varying ranges, but overall, 76% indicate that the Kintamani dog tends never to show fear signs when treated or examined by a veterinarian. Döring et al. (2009) state that dogs > 2 years old are significantly more fearful than dogs <2. In addition, female dogs are more fearful than male dogs. Generally, older dogs will visit the clinic or veterinarian more frequently, which may almost always result in a painful or stressful situation. This result may also show that the Kintamani dog mostly

never showed signs of fear when treated by a veterinarian. This behavior may have occurred due to the Kintamani dog in this study aged 3-5 months. The behavior scale is 0 (never) and 4 (always), meaning some dogs still experience fear when visiting the clinic or veterinarian. Although most dogs tolerate therapy or medication well, a visit to the vet for a surgical procedure is almost always an unpleasant or possibly painful experience for the dog (Döring et al. 2009).

The results of the eight questions on aggression and fear show that overall, they have a low average score on each question item, where only the third question item has a score of 3 (usually). This result shows that the Kintamani dog scores high on boldness. Boldness in dogs has been defined as exploration, readiness to play with humans, and a low frequency and intensity of afraid or hostile behavior directed at humans and dogs, as well as non-social objects or events (Starling et al. 2013; Rodriguez et al. 2021). Based on the results obtained in this study and previous studies that discuss dog behavior, the Kintamani dog in Indonesia has bold behavior.

From the discussion above, Kintamani dogs have trainable and bold traits. This behavior is a product of human selection in domestication. Therefore, the nature of trainability and boldness in the Kintamani dog population helps explain further the evolutionary mechanisms that gave rise to social cognitive skills. The most important factor that makes a Kintamani dog trainable and boldness is its desire to impress their human companions. This is in accordance with the Kintamani dog breed standard. Its designation is as a companion animal.

Conclusion

The result shows that The Kintamani dog scores high on trainability, bold behavior and low on aggression and fear. The findings indicate that the Kintamani dog has trainable behavior and a high score on boldness.

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Author contribution

AM collecting data, preparing manuscript. IWNFG conceptualization, supervision, review of the manuscript. PDJ, AAGOD and INS supervision of the data collection and analysis. IKP conceptualization, and review of the final manuscript.

Conflict of Interest

The authors declare there is no conflict of interest.

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