



CASE REPORT: BEHAVIOR

Addressing the Most Common Veterinary Visit-Associated Canine Behavior Concerns

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Abstract

Canine behavior concerns, including fear, anxiety, and aggression, are frequent challenges for patients and staff in veterinary clinics, often resulting from learning, genetics, and the environment. These behaviors can complicate veterinary care procedures, increase the risk of injury to staff and owners, have an emotional impact on clients, and negatively impact canine welfare. Research shows that fear-related behaviors are common during veterinary visits, with contributing factors such as age, previous experiences, handling techniques, and owner-related stress. While pharmacologic interventions can aid in some cases, addressing the underlying causes of these behaviors requires a holistic approach. The 5 Domains Model provides a structured framework to assess and modify factors contributing to fear and aggression that can be implemented in clinical settings. This case report illustrates the application of environmental modifications, low-stress handling techniques, and behavioral interventions in a dog with severe veterinary-related aggression.



Take-Home Points

- Environmental modifications, such as reducing sensory overload, creating safe and comfortable spaces, and structuring clinic flow, can minimize fear-based responses.
- Low-stress handling techniques reduce restraint, allowing for more cooperative veterinary visits.
- Owner involvement and happy visits improve patient confidence and reduce anticipatory stress.
- Positive reinforcement (e.g., treats, verbal praise) helps condition positive associations with handling.
- A structured, welfare-based approach improves long-term behavior and patient outcomes.

Fear, anxiety, and aggression are among the most common behavioral issues encountered in veterinary clinics, significantly affecting patient welfare, clinical efficiency, and staff safety.^{1,2} Studies indicate that up to 78.5% of dogs display fear-related behaviors, ranging from avoidance to defensive aggression, during veterinary visits.^{1,2}

Veterinary-related fear can be triggered by several factors, including genetics, unfamiliar environments, previous negative or lack of experiences, and outdated or improper handling techniques. Fearful dogs are more likely to freeze, resist restraint, vocalize, and engage in defensive aggression, increasing the risk of injury to veterinary staff and leading to potential complications in medical care. In severe cases, prolonged fear responses may contribute to chronic stress, which can negatively impact both physical and emotional wellbeing.³

A 2021 survey by Stellato et al identified several risk factors influencing veterinary-related fear and aggression, including⁴:

- Dog-specific factors (general fearfulness, prior experiences with handling)
- Owner-related factors (stress levels, handling confidence)
- Clinic-related variables (restraint techniques, environmental triggers)

Physiologic stress markers, such as elevated heart rate, blood pressure, and cortisol levels, occur frequently in cats during veterinary visits and have been found to affect dogs as well, a phenomenon often referred to as the “white-coat effect.”⁵ Stress during clinical visits not only affects behavior but can also impact diagnostic accuracy by altering physiologic parameters.⁶ Dogs that associate veterinary visits with fear and anxiety are more likely to have their owners avoid routine care, leading

to delayed medical interventions and poorer health outcomes.⁷ Additionally, dogs that struggle with handling in clinical environments often have underlying pain conditions, sensory sensitivities, or generalized anxiety disorders that exacerbate stress responses.⁸ Identifying and addressing these underlying factors are essential for managing veterinary-related aggression.

This case report details the assessment and veterinarian-developed treatment plan of Bernie, a 4-year-old mixed-breed dog, who presented with severe fear aggression during veterinary visits. The report outlines the impact of environmental modifications, structured behavior modification, and veterinary nurse-led interventions in improving Bernie’s ability to tolerate handling in a clinical setting.

THE 5 DOMAINS MODEL

A comprehensive, multifaceted approach is needed to improve patient cooperation while maintaining staff safety and clinical efficiency. This case used the 5 Domains Model as a guiding framework (**FIGURE 1**), implemented through the following interventions:

- 1. Environment**—Modified the clinical setting to reduce sensory overload, including visual barriers, scent masking, and reduced noise stimuli.
- 2. Behavior**—Applied low-stress handling and counterconditioning, reinforcing calm behaviors with high-value rewards.
- 3. Health**—Addressed underlying medical contributors to stress (e.g., pain) through pre-exam assessments.
- 4. Nutrition**—Incorporated strategic use of food rewards as part of desensitization and positive reinforcement training.
- 5. Mental state**—Supported emotional resilience by promoting predictability, allowing choice where feasible, and involving owners in previsit training.



The 5 Domains Model provides a structured framework for addressing these challenges, allowing veterinary professionals to develop targeted strategies that enhance patient welfare, improve clinical outcomes, and build long-term positive associations with veterinary visits.

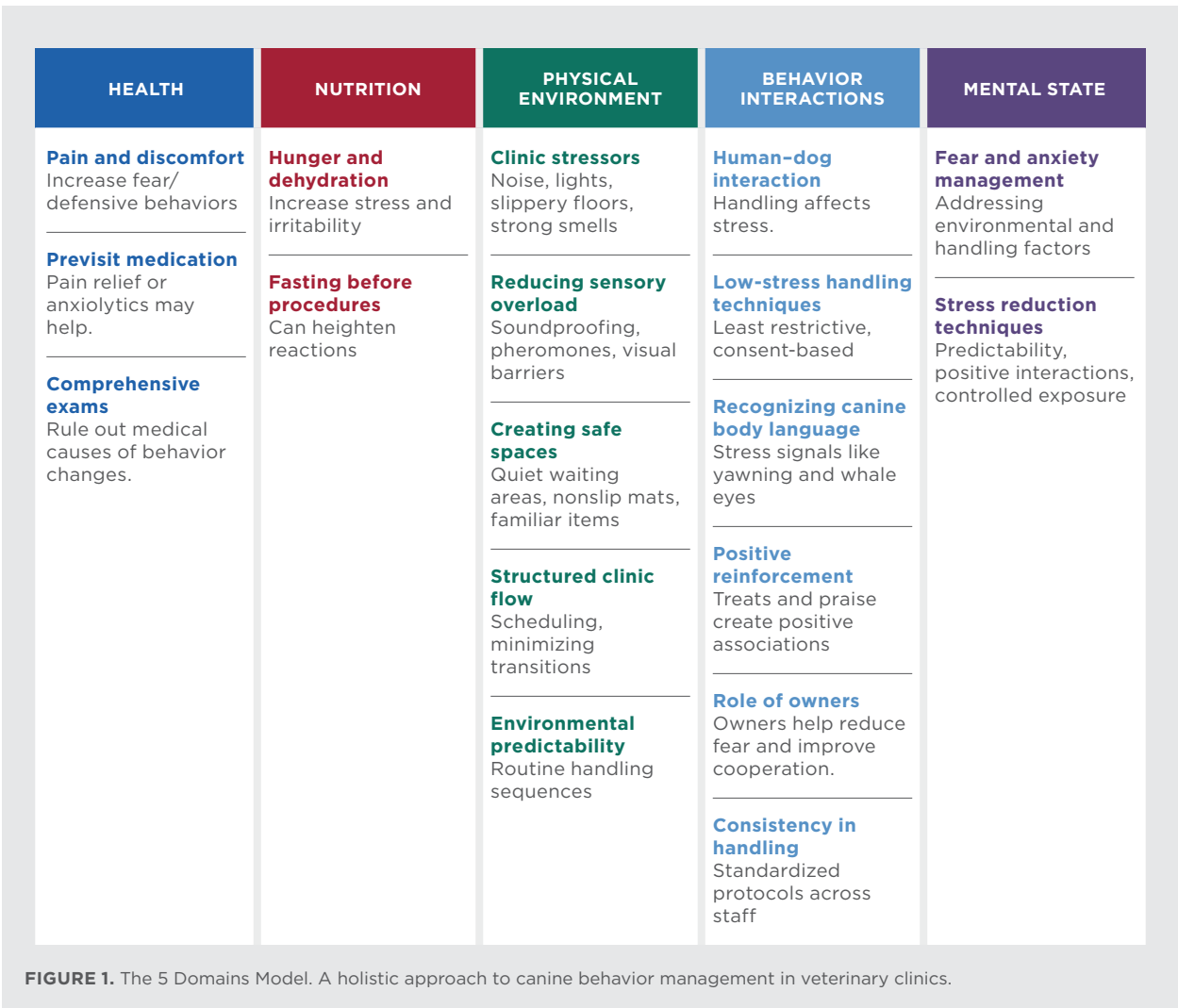
SIGNALMENT, HISTORY, AND PRESENTATION

Bernie, a 4-year-old neutered, 26-kg (57-lb) mixed-breed dog with a moderate exercise routine, presented with a history of severe fear-related aggression during veterinary visits, at home, and in public spaces. His owner reported:

- Lunging, growling, and snapping when being approached by veterinary staff and strangers

- Escalating stress levels (e.g., diverting gaze, pacing, panting, tense body) upon arrival at the clinic, often requiring premedication that had limited efficacy due to physiological arousal
- Charging at unfamiliar people in enclosed spaces (such as exam rooms)

The owner noted that Bernie's first negative experience at a veterinary clinic occurred at 6 months old when he was restrained during a procedure. This experience contributed to the escalation of fear-based responses over subsequent years, culminating in conditioned avoidance and anticipatory anxiety. These responses—rooted in self-preservation—manifested as aggressive behaviors during veterinary visits, reflecting the dog's impaired ability to cope with perceived threats.





INITIAL ASSESSMENT

Physical Findings

- Body condition score of 5/9 (ideal)
- Elevated heart rate (150 beats per minute) and respiratory rate (panting) on arrival
- Dilated pupils, tense body posture, ears pinned back
- Hypersensitivity to handling, particularly around the neck and legs, evidenced by flinching, muscle tensing, and withdrawal behaviors, even in response to light or gentle touch

Diagnostic Tests and Results

- **Orthopedic exam:** No significant findings
- **Pain assessment:** No overt signs of pain, ruling out pain-induced aggression
- **Blood work:** Unremarkable

Differential Diagnosis

- Fear aggression likely associated with previous negative veterinary experiences
- Generalized anxiety disorder leading to heightened stress responses in clinical environments
- Lack of socialization and exposure to positive handling experiences in a veterinary setting

TREATMENT PLAN AND ROLE OF THE VETERINARY NURSE

A multidisciplinary approach was implemented to address Bernie's fear aggression during veterinary visits. Treatment followed the doctor's orders and focused on modifying the clinical environment (**CLINIC RESOURCE 1**), employing low-stress handling techniques (**CLINIC RESOURCE 2**), implementing a structured behavior modification plan, and educating the owner on stress management strategies.

1. Environmental Modifications and Antecedent Management

Environmental modification was a primary focus to reduce previsit anxiety and in-clinic stressors. Veterinary nurses played a key role in implementing the following:

- **Alternative waiting arrangements**—Bernie remained in the car upon arrival and was escorted directly into a quiet, low-traffic examination room, minimizing exposure to anxiety-triggering stimuli.
- **Sensory adjustments**—The examination room was prepared with dim lighting, nonslip mats, and



CLINIC RESOURCE 1

Creating a Calm Environment for Canine Patients



CLINIC RESOURCE 2

Positive Human-Dog Interactions in Veterinary Clinics



CLINIC RESOURCE 3

Making Veterinary Clinics a Positive Experience for Dogs

pheromone diffusers such as Adaptil (Ceva, adaptil.com/us) to promote relaxation.

- **Handling area adaptations**—Bernie was examined on the floor rather than on an examination table to prevent forced handling and provide him with a sense of control.

2. Low-Stress Handling Techniques

Veterinary nurses followed a low-stress, agency-based handling protocol to prevent escalation of stress-related behaviors, including:

- Bernie was given time to voluntarily approach the veterinarian, avoiding direct confrontation.
- High-value treats (e.g., chicken, cheese) were used to reinforce (through operant conditioning) calm behavior (e.g., relaxed body, soft eyes, loose body) throughout handling.
- Handling was paused immediately when early stress indicators (e.g., tense body, tense muzzle, lip licking, whale eyes [showing whites of the eyes]) were observed.
- Staff maintained a neutral body posture (nonthreatening, relaxed stance); avoided direct eye contact; and used calm, low-pitched verbal cues to reduce perceived threats.

3. Behavior Modification and Desensitization

A structured behavior modification plan was introduced to improve Bernie's tolerance to the clinic environment, comprising:

- **Happy visits (FIGURE 2, CLINIC RESOURCE 3)**—



Bernie attended weekly nonprocedure visits, allowing him to explore the clinic without undergoing medical handling.

- **Systematic desensitization**—Exposure to clinic-related stimuli while remaining under emotional threshold, which was then gradually increased, starting with brief waiting room visits and progressing to short, hands-off exams.
- **Counterconditioning**—Used to pair each interaction with veterinary staff, including proximity and light handling, with positive experiences such as food, praise, and gentle petting, regardless of behavior. As Bernie's comfort increased, positive reinforcement was contingent on voluntary participation in handling exercises.

4. Owner Education and Home Strategies

Owner compliance was essential to ensuring long-term behavioral improvement. Veterinary nurses provided tailored education and support to the owner on:

- Recognizing early stress signals to intervene (e.g.,

removal from situations) before escalation

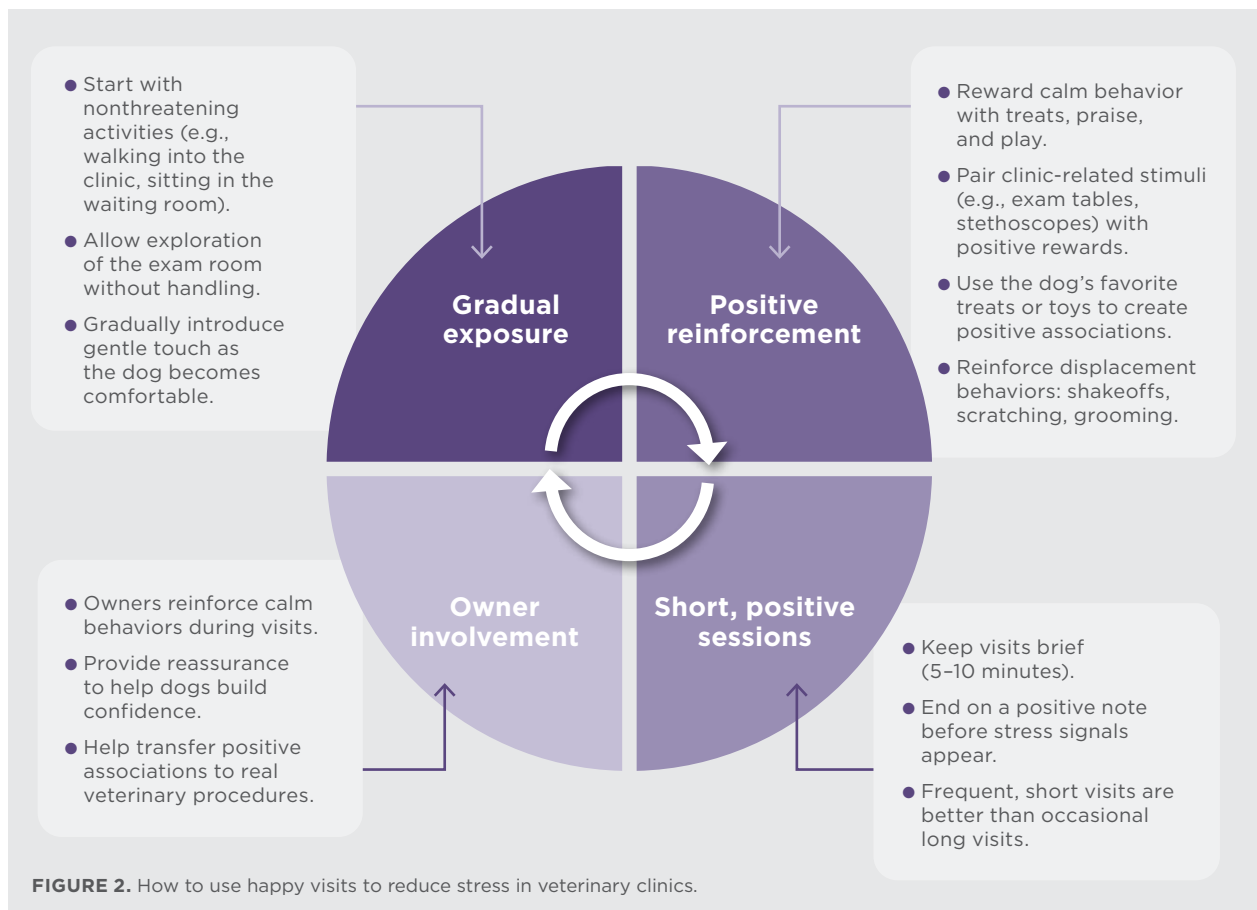
- Previsit training techniques, including car desensitization, short exposure trips to the clinic, and reinforcing calm behaviors at home
- Encouraging displacement behaviors (e.g., sniffing, shaking off) as self-soothing mechanisms

OUTCOME

Over 3 structured appointments, Bernie's responses improved significantly, exhibiting:

- Reduced previsit anxiety, which meant Bernie walked into the clinic voluntarily
- Decreased avoidance and defensive aggression, allowing for a full physical exam
- Cooperative low-restraint handling, enabling vaccinations without sedation

The owner reported reduced anticipatory stress and increased confidence in handling Bernie during clinic visits.





DISCUSSION

Fear, anxiety, and aggression are common canine behaviors in veterinary settings but can be successfully managed using a structured, welfare-focused approach.^{1,2}

A key takeaway from this case is the importance of environmental control. Simple modifications, such as reducing sensory overload, creating quiet waiting areas, and using low-stress handling techniques, significantly lowered Bernie's stress levels. Research shows that veterinary hospital-induced stress can alter physiologic parameters, leading to elevated heart rates and increased cortisol levels, further exacerbating fear-based behaviors.⁶ These environmental changes can be easily applied in most veterinary clinics to improve patient comfort and compliance.⁷

Another major factor in Bernie's success was the use of positive reinforcement and counterconditioning. By pairing handling experiences with rewards, Bernie learned to associate veterinary visits with positive outcomes rather than fear. Studies indicate that counterconditioning techniques, such as food reinforcement, can significantly reduce stress and increase long-term behavioral resilience in fearful dogs.⁹ Additionally, structured happy visits—short, stress-free trips to the clinic with positive interactions—have been shown to desensitize dogs to clinical environments and improve handling tolerance over time.¹⁰

Finally, this case highlights the essential role of owner involvement. Veterinary nurses should¹¹:

- Educate owners on recognizing stress signals and responding appropriately
- Encourage previsit acclimation (e.g., happy visits)
- Support cooperative, low-restraint handling training
- Promote positive handling experiences at home to enhance long-term behavioral success

Research has demonstrated that owner presence during veterinary visits can act as a buffer against stress, improving canine welfare and enhancing cooperation during procedures.¹²

By implementing antecedent environmental management, positive human–dog interactions, and structured behavioral interventions, veterinary professionals can significantly reduce stress-related behaviors, improve clinical outcomes, and enhance pet and human experiences in the veterinary setting. **TVN**

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