"But it worked for my mother's cat". Some common misconceptions about anecdotal evidence

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ABSTRACT: As evidence-based veterinary nursing is becoming a more common concept in veterinary practice, RVNs will more often be presented with anecdotal evidence by owners presenting to their practice. It is important that RVNs understand some of the issues associated with anecdotal and testimonial evidence and why these are not a suitable basis for decisions, so that they make decisions based on the best-available evidence and can attempt to educate clients. This article explains some of the issues surrounding anecdotal and testimonial evidence to support RVNs in their quest to practice based on evidence.

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Introduction

As evidence-based veterinary nursing (EBVN) becomes a more common concept in veterinary nursing, so too do the day-to-day problems encountered by RVNs practising EBVN. Most commonly, owner responses to veterinary practitioners' criticism of alternative therapies and animal care products or the quality of the evidence base on which they rely focuses on anecdotal evidence rather than objective science-based evidence. Generally, owners refer to word of mouth, social media or product testimonials when rebutting evidence-based objective criticisms made by vets and vet nurses. It is therefore important for RVNs to understand why anecdotes, personal experience or testimonials are not reliable sources of evidence. This article aims to highlight some of the common misconceptions surrounding anecdotal, personal or testimonial evidence in order to support RVNs in their endeavour to practice EBVN.

Problems with anecdotes, testimonials and personal experience

Vets and RVNs alike rely on a working relationship with clients in order to act in the interest of the patient. However, negotiating perceived conflicts between the beliefs and values of the client and what the evidence-based practitioner believes is best for the patient can be difficult (McKenzie, 2014), especially if the client's beliefs are based on anecdotes and testimonials. Often, owners argue that scientific evidence is not relevant because there is a large body of anecdotal or testimonial evidence where other owners report that a product or therapy has worked. However, these observations are unreliable due to their uncontrolled nature and the inherent nature of human beings to believe our own and others' experiences. A recent study by de Barra, Eriksson, and Strimling (2014) has produced convincing evidence for the degree to which internet reviews of medical products grossly overestimate the actual value of the treatments being reviewed. The authors concluded that people who have positive experiences are far more likely to write testimonials than are people who don't. This phenomenon creates a bias towards how well a therapy or product works, even if it doesn't.

In addition to this feedback bias, there is also the placebo effect to consider. Although possibly counterintuitive, the existence of a placebo effect has been previously described in veterinary medicine. For example, Munana, Zhang, and Patterson (2010) found that in epileptic dogs a decrease in seizure frequency was

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observed in dogs receiving a placebo treatment. Furthermore, the placebo effect can also originate from the owner of the animal. Investigating canine hip dysplasia treatment, Jæger, Larsen, and Moe (2005) demonstrated that when owners believed that their dog was receiving the active treatment, they reported a significantly greater improvement in pain signs compared with those who believed their dog was receiving placebo or were uncertain about the treatment administered. Similarly, Conzemius and Evans (2012) found that a placebo effect was a common occurrence in the evaluation of response to treatment for osteoarthritis, where owners reported an improvement in lame score for dogs receiving placebo treatment. The placebo effect means that owner-perceived signs of disease in animals can improve even if no effective treatment is administered. In other words, the product or therapy does not work and the improvement is caused by something else.

There is also the *post-hoc fallacy* to contend with. This concept is based on the mistaken understanding that correlation implies causation, or in other words, that simply because one event happens after another, the second event was caused by the first (Costello, 2017). However, sequences don't establish a causal relationship. Frequently, owners offer testimonials about how "this product really worked for their pet". What they fail to understand is that there is no basis for claiming it worked, and all they can claim is that they observed an improvement following administration of said product/therapy. There are various reasons for this improvement: for example, the disease may have run its natural course, the disease is cyclical, there may have been multiple concurrent therapies, or the disease may even have been misdiagnosed. Only a controlled, carefully designed study can be relied on to make sound conclusion of efficacy or a product or therapy, as only through careful experimental design can causation be inferred. Anecdotal and testimonial evidence are the exact opposite of such a study.

The existence of feedback bias, placebo effect and misunderstanding of causation highlights the need for RVNs to be able to appraise evidence to support their decision-making and their advice to clients. Methods of evidence appraisal are beyond the scope of this article, but a good introduction with useful examples of how EBVN links to practice has been produced by Buckley (2017). Furthermore, it is essential that RVNs attempt to lead clients to reconsider their opinions. Because this challenges people's core values and beliefs, simply presenting the facts is often not enough. Being given evidence that they are wrong tends to strengthen the false beliefs and leads to owners seeking like-minded individuals. It will take a patient and clear approach in lay language and a relationship built on trust and rapport to convince clients, and it will not work for every case. Also, RVNs will need the support of vets and practice managers if they are challenged by clients. However, for the sake of the welfare of the patient, it is important that clinical decisions and veterinary advice is based on sounds, objective, science-based evidence.

Conclusion

It is important that the RVN uses the best-available evidence when making clinical decisions and when providing advice to clients. They need to be aware of the problems associated with the reliability of anecdotal and testimonial evidence in order to effectively engage with owners who rely on these sources of evidence and to act in the best interest of the patient.

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