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Clinical Techniques in
Small Animal Practice

Techniques for Objective Outcome Assessment

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Companion animal rehabilitation, a collaborative practice of physical therapy and veterinary medicine, can only demonstrate the effectiveness of its theories, techniques, interventions, and modalities through evidence-based practice, utilizing standardized, reliable, and valid outcome measures, correlated with objective diagnostic data. This essay examines existing and potential objective outcome measures utilized in companion animal rehabilitation and physical therapy regarding pain, vital signs, body condition and composition, range of motion, muscle strength, inflammation, functional mobility, and gait. Discussion is included of the traditional disablement model and the evolution of the physical therapy diagnosis, prognosis, and plan of care.
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In this brave new world of evidence-based practice, whether in physical therapy or veterinary medicine, outcomes assessment has garnered the attention of researchers, clinicians, and the public alike. In fact, the clinician must now examine and evaluate the literature for the current best evidence to ensure that her clinical decisions are most effective, ethical, and efficient.[1] The American College of Veterinary Surgeons, in 2006, formed the Outcomes Measures Program (OMP) to support mechanisms for implementation of evidence-based practice in small animal veterinary surgery.[1] Similarly, in 2000, the American Physical Therapy Association set a Clinical Research Agenda for Physical Therapy to facilitate research that is meaningful and useful to physical therapy clinicians. There has been a not-so-subtle but relatively recent shift from emphasis on intuition, clinical experience, and pathophysiologic rationale as sufficient evidence for clinical decision-making.[1] Still, systematic reviews, clinical trials, case series and reports, and expert opinion must be assessed in regards to appropriate applicability, relevance, impact, and power relative to companion animal rehabilitation practice.[1] Partly due to the coordinated timing of the exponential growth of this field with this paradigm-shift toward evidence-based practice, this relatively infantile discipline is under greater scrutiny by researchers, veterinary medical professionals, and the public.

Regardless, evidence and an outcomes-based clinical decision-making approach are necessary for appropriate communication, efficient and effective patient care, client and referral-source satisfaction, financial solvency, as well as the vitality and acceptance of rehabilitation theories, techniques, interventions, and modalities as a standard of practice in veterinary medicine. "It just works" is not acceptable. Physical therapists and rehabilitation professionals are familiar with the need to prove outcomes relative to the healing powers of time, especially with regards to satisfying third-party payors, referral sources, and clients by ensuring the patient's or client's return to the highest possible level of function and quality of life.

Outcome measures are tools, tests, or scales administered and interpreted by clinicians "that have been shown to measure accurately a particular attribute of interest . . . and are expected to be influenced by the intervention."[2] Ideally, these outcomes are objective and quantitative, so to avoid bias. They must be valid (measuring what they intend to measure), with a standardized procedure, reliable (producing consistent and reproducible results), and responsive to clinical change. It is essential that these measures have standardized methods of administration and scoring and effectively address an operationally defined, clinically relevant, and meaningful question.[1,2]

Appropriate use of objective outcomes requires that there be established and universally accepted operational definitions for the impairments or functional limitations which are defined, discussed, or measured. Obviously, this field, a young collaboration of veterinary medicine and physical therapy, has yet to establish a consensus regarding these operational definitions. Operational definitions are precise, specific, and measurable. Only when we have met these criteria can fair comparisons of outcomes between and among com-

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panion animal rehabilitation interventions and along the course of the individual patient's rehabilitation be made.

Through the collaboration of veterinary medicine and physical therapy, the field of companion animal rehabilitation is fortunate to have access to and practical understanding of the varied and existing outcome measures that have been validated, standardized, and regarded as reliable in the human population. There has been recent progress in establishing valid, standardized, and reliable outcome measures in the companion animal population[3]; however, there are a multitude of other outcome measures, undiscovered by the veterinary medical profession, which might be borrowed from traditional physical therapy and applied, with modifications, in the companion animal rehabilitation field. Some of these measures will be discussed.

Physical Therapy Diagnosis and the Disablement Model

The companion animal rehabilitation team may be inclusive of the rehabilitation-trained veterinarian, physical therapist or physiotherapist, rehabilitation-trained veterinary technician or nurse, physical therapist assistant, the client, and, of course, the patient. Demonstrating a novel approach, patient-focused care, the companion animal rehabilitation team promotes collaborative examination, evaluation, and clinical decision-making and interdependent application of therapeutic interventions. The focus of the application of these interventions is on the goals, needs, and expectations of the individual patient and client. Simply, it is a more product-oriented or outcome-oriented rather than process-oriented approach. Through this approach, each member of the team will contribute to the eventual outcome of the rehabilitation intervention.

As an integral member of this team and an expert in the application of rehabilitation theories, techniques, interventions, and modalities, the physical therapist can also play a significant and alternate role in the examination, evaluation, diagnosis, prognosis, and clinical decision-making and treatment-planning of the companion animal rehabilitation patient. This statement raises eyebrows of some veterinary medical practitioners who focus on the more traditional methods of examination, evaluation, and diagnosis; however, the physical therapist examines and evaluates the patient in a manner that is appreciably dissimilar from these methods with which veterinarians are more accustomed. In fact, the physical therapist forms a physical therapy diagnosis and prognosis, which directs the strategies and tactics implemented in the physical therapy plan of care.

Nagi, in 1965, outlined the Disablement Model, a classification scheme of disability. The primary level in this scheme is that of pathology, "an interruption or interference with normal processes and efforts of the organism to regain a normal state." This is the level that the veterinarian traditionally diagnoses and treats, for example, in coxofemoral osteoarthritis. The physical therapy diagnosis is a statement of impairment or functional limitation, which is complementary to and in alignment with the veterinary medical diagnosis. Impairment refers to a "loss or abnormality of cognitive, emotional, physiologic, or anatomic structure or function," for example, restricted coxofemoral joint extension passive range of motion. A functional limitation is a "restriction, limitation, or lack of ability to perform an action in the manner or range consistent with the purpose of an organ or organ system," for example, the inability to climb stairs without bunny hopping or an unwillingness to jump. At times there is confusion of the statement of functional limitation with that of disability. Disability is a "limitation in the performance of socially defined roles and tasks within a sociocultural and physical environment." An example of a disability in a companion animal is the inability of a narcotics detection dog to effectively perform his work duties, searching vehicles and package-handling facilities, due to an unwillingness to jump.[4]

Traditional physical therapy and evolving companion animal rehabilitation outcome measures focus on assessment of the patient at the levels of the impairment and functional limitation.

Subjective Outcomes

When examining and evaluating the companion animal rehabilitation patient, the clinician cannot dismiss the valuable subjective report of the client, including historical information, a description of pain behaviors, and statement of goals and expected outcomes. Frequently, based on the clinician's experience (a low level of evidence, but evidence nonetheless) and this subjective information, a list of differential diagnoses can be constructed. It is beyond the scope of this article to discuss the rehabilitation-oriented client interview in detail, but important to mention that this subjective information will guide the implementation of the rehabilitation plan of care. In fact, valid, standardized, and reliable client self-report questionnaires, such as the Medical Outcomes Study Short Form and Western Ontario and McMaster Universities Osteoarthritis Index, are commonly used in physical therapy and are suggested as model outcome measures in companion animal rehabilitation practice. The modified versions of these and other questionnaires, as applied to companion animal rehabilitation, must first be validated to kinetic, kinematic, diagnostic imaging, or other objective measures, however.[1]

Pain Assessment and Vital Signs

The American Animal Hospital Association has directed veterinary medical professionals to incorporate the rating of pain as the fourth vital sign, in addition to temperature, heart rate, and respiratory rate. These vital signs are equally important to note before, during, and following the implementation of rehabilitation techniques, interventions, and modalities. While the patient serves as his own control, a thorough record of vital signs might represent objective outcome measures, dependent on the reliability of the procedure, tester, and instrument utilized. As well, further information regarding patient tolerance to and safety of the rehabilitation intervention applied can be concluded based on the maintenance of the patient's vital signs within a predetermined range.

While body temperature might be difficult to monitor noninvasively during the administration of rehabilitation interventions, especially aquatic and therapeutic exercise, ob-