ABSTRACTS

Johnson K.A. and Snow C.J. The model system: a practical research tool for the clinician. *Physiotherapy Canada* 1986; **38**(4): 225-229.

There is no doubt that more research is needed in physiotherapy to demonstrate efficacy and to improve present treatments. The purpose of this paper is to discuss the *model system* as a specific, effective, and relatively simple and practical research technique useful for clinicians interested in studying the effects of their treatments. The model system involves duplicating characteristics of a condition and applying controlled experimental tests to those characteristics. The problems associated with clinical trials, together with the advantages and disadvantages of using a human model system in clinical practice, are emphasized in this paper. Methods of developing model systems are discussed and examples given, including the authors' own model system designed to study the effects of ultrasound on acute inflammation. The importance of accurate and precise measurement tools is also stressed, together with the need for adequate experimental controls to minimize variability and bias. The authors argue that once a technique is proven effective within a model system, the clinician will have acquired information essential for the success of a clinical trial. They contend that the human model system therefore provides a viable method by which novice and time-restrained clinicians can actively contribute to physiotherapy knowledge, and that, with this "hands on" research experience, clinicians can greatly increase their chances of success with the much more difficult test of treatment effectiveness — the clinical trial.

Authors' Summary

Ottenbacher K.J. *et al.* Quantitative analysis of the effectiveness of pediatric therapy. Emphasis on the Neurodevelopmental treatment approach. *Phys Ther* 1986; **66**(7): 1095-1101

We investigated the effectiveness of neurodevelopmental treatment when used both in isolation and in combination with other developmental therapies. The data were analyzed using recently developed methods of quantitatively synthesizing research results in which the literature review process is regarded as a unique type of research. Our analysis revealed that the subjects who received NDT performed slightly better than the control-comparison subjects who did not receive the intervention. The study outcomes are discussed in relation to several design variables and study characteristics associated with subject performance. The advantages and limitations of quantitative reviewing are identified briefly, and the potential use of the procedures in clinical research is emphasized.

Authors' Summary

Webb J.A. Pain control via the dorso-lumbar sympathetic outflow. *Australian Journal of Physiotherapy* 1986; **32**(2): 79-87.

No acceptable scientific explanation has yet been found to account for the success of such remote treatments as acupuncture and connective tissue massage which do not conform to the recognized distribution of segmental reference.

This paper is the result of clinical observations over the past seven years, revealing previously unsuspected effects from applying various treatments to the area of the sympathetic dorso-lumbar outflow for a wide variety of painful conditions. An hypothesis is offered which may account for those remote effects hitherto poorly understood.

Author's Summary

Zusman M. Spinal manipulative therapy: Review of some proposed mechanisms, and a new hypothesis. *Australian Journal of Physiotherapy* 1986; **32**(2): 89-99.

Some of the claims for the effects, and mechanisms for the relief of pain of spinal origin, which have been attributed to spinal manipulative therapy are reviewed. Most of these are still to be adequately investigated experimentally; the few which have been specifically investigated have not been supported.

It is hypothesized that an effective, albeit often temporary, decrease in patients' perception of pain may be a result of two ordered events. The first is inhibition of reflex muscle contraction which is maximally mediated by joint afferents with end of range passive joint movement. The second is a hysteresis effect for neural discharge in joint afferents which may be produced with maintained or repetitive end of range passive joint movement.

Author's Summary

Garradd J. and Bullock M. The effect of respiratory therapy on intracranial pressure in ventilated neurosurgical patients. *Australian Journal of Physiotherapy* 1986; **32**(2): 107-111.

Considerable concern has been expressed about the effect of respiratory therapy on intracranial pressure (I.C.P.) in the acute stage of head injury. A study was performed to evaluate the effects of respiratory therapy techniques on the level of I.C.P. in neurosurgical patients. Twenty subjects were studied in both the paralysed and non-paralysed states. Their intracranial pressures were monitored during periods of no treatment (the control), during the application of individual respiratory techniques and during a complete respiratory treatment.

Analyses revealed that total treatment time is a crucial factor in the level of I.C.P. Patients with a high resting I.C.P. are more vulnerable to large increases, prolonged manual hyperinflation raises I.C.P. level and suctioning, in particular, causes dramatic increases in I.C.P.

Authors' Summary