Manipulation, Monkeys, and Bunches of Bananas

Manual therapy interventions have been used by physical therapists since the inception of the profession[1]. Of course, in those early days the manual physical therapy (MPT) techniques used could hardly be called sophisticated. But neither were manual interventions in other health care professions. To use chiropractic as a contemporary example: DD Palmer once broke a mirror in his treatment room after he saw a patient observing him during an adjustment; he was afraid that this observation would allow the patient to replicate the techniques and set himself up as a competitor[2]. Since these early beginnings, the techniques and the rationale for their use have developed significantly in all manual medicine professions. Physical therapists have provided and they continue to provide major contributions to technique development, hypothesis generation, and research in manual medicine.

In the US and most other countries, MPT training is part of an integrated educational continuum. This continuum starts in the entry-level professional program with specific MPT and related foundational courses and continues throughout professional practice with post-professional educational opportunities in the form of continuing education seminars, clinical residency and fellowship training, post-graduate academic and diploma programs, clinical mentorship, and MPT certification programs[3,4].

Over the years, US entry-level physical therapy (PT) education has placed an increasing emphasis on MPT curricular content[5-8]. With the publication of the *Manipulation Education Manual*[9], the American Physical Therapy Association has clearly shown its commitment and intent to standardize, to a greater degree, the MPT entry-level curricular content and to include both thrust and non-thrust techniques. This inclusion seems to shift the emphasis on skill development in MPT diagnosis and management, including thrust manipulation, from the post-graduate to the entry-level and has led to the question: Are these skills in fact entry-level skills? It is my opinion that not only are MPT diagnosis and management, including thrust manipulation, entry-level skills but also that the research evidence available on efficacy and efficiency of thrust manipulation requires the inclusion of these techniques to a greater degree in entry-level PT curricula worldwide.

Opponents of the increase in MPT entry-level curricular content may argue that skills in MPT diagnosis and management can only be developed with clinical exposure. Research on this topic is, however, limited. A Medline search using the terms "novice OR student AND manipulation" and a hand search of my personal library yielded only five relevant references.

Mior et al[10] reported on interrater reliability of sacroiliac motion palpation tests comparing chiropractic students to experienced clinicians; κ-values for the students ranged from 0.00-0.30, while those for the clinicians ranged from 0.00-0.167. Gonella et al[11] reported on reliability of lumbar motion palpation tests by physical therapists and found higher interrater agreement for the two less experienced clinicians. Bybee and Dionne[12] showed significantly greater interrater reliability in PT students than in experienced PT clinicians for a McKenzie-based diagnosis for patients with neck pain, while Cleland et al[13] noted that a significantly greater sympatho-excitatory effect (increased skin conductivity) was elicited by an experienced (36.25%) versus a novice PT clinician (17.75%) when applying a grade III PA technique to T12. Finally, Cohen et al[14] found no differences in biomechani-

cal parameters for a thoracic thrust technique performed by novice versus experienced chiropractic clinicians.

So, the literature retrieved does not support the concern about fewer skills in students or novice clinicians in manual medicine diagnosis and, to some extent, management. Students possess the psychomotor and cognitive skills required for basic MPT clinical practice, making these skills no different from skills in other practice areas to which students are introduced during entry-level PT education. Basic MPT skills in combination with further education and clinical practice should allow the therapist to progress from novice to expert clinical practice in a way similar to the development, over time, of expert clinical practice in other PT practice areas.

So the correct question is not whether MPT diagnosis and management including thrust manipulation are entry-level PT skills, but rather whether the basic MPT skills provided during entry-level PT education will make for novice clinical practice that is safe for the patient while also allowing for clinician development from novice to expert. In this regard, a quote from one of the instructors during my own MPT clinical residency came to mind:

"If you have enough bananas, you can train a monkey *how* to manipulate.
But even all the bananas in the world will not help you teach the monkey *when* to manipulate…"

Of course, it is not my intention to compare a PT student—or for that matter any manual medicine practitioner—to a monkey. The point of this quote is that thrust manipulation need not be shrouded in mystery as a skill only for the duly initiated. It is a skill like many others that can be taught to entry-level PT students. I believe that the proposed standardization of entry-level MPT curricular content will provide novice PT clinicians with an increased level of MPT skills and knowledge and allow for even more effective and efficient evidence-based care to their patients. I also believe that, even without this imminent standardization, many things already combine to position physical therapists as health care professionals that are uniquely qualified to decide *when or when not* to use thrust manipulation, thus ensuring patient safety (and thereby distinguishing them from the monkey in the quote). Among these are:

- The current entry-level professional programs with their specific MPT and related foundational courses
- The exposure of PT students and clinicians to varied patient populations during clinical rotations and work in private practice, hospital, wellness, and rehabilitation settings
- The many clinical practice areas contained within the profession.

Standardization of the entry-level MPT curricular content will only strengthen this unique position and I, for one, look forward to its implementation.

Peter Huijbregts, PT, DPT, OCS, FAAOMPT, FCAMT

REFERENCES

1. Paris SV. A history of manipulative therapy through the ages and up to the current controversy in the United States. *J Manual Manipulative Ther* 2000;8:66-77.
2. Wiese G, Peterson D. Daniel David Palmer: "Old Dad Chiro," the founder of chiropractic. In: Peterson D, Wiese G. *Chiropractic: An Illustrated History*. St. Louis, MO: Mosby-Year Book, Inc., 1995.
3. Virginia Board of Medicine. Study of spinal manipulation [website], 1999. Available at: http://www.dhp.state.va.us/PhysicalTherapy/docs/Report%20on%20Spinal%20Manipulation.doc. Accessed September 22, 2004.
4. CPA. *Position Statement on Manipulation*. Toronto, ON: Canadian Physiotherapy Association, July 2003.
5. Stephans EB. Manipulative therapy in physical therapy curricula. *Phys Ther* 1973;53:40-50.
6. Ben-Sorek S, Davis CM. Joint mobilization education and clinical use in the United States. *Phys Ther* 1988;68:1000-1004.

7. Bryan JM, McClune LD, Romito S. Spinal mobilization curricula in professional physical therapy education programs. *J Phys Ther Ed* 1997;11:11-15.
8. Boissonnault W, Bryan JM, Fox KJ. Joint manipulation curricula in physical therapist professional degree programs. *J Orthop Sports Phys Ther* 2004;34:171-181.
9. APTA Manipulation Education Committee. *Manipulation Education Manual for Physical Therapist Professional Degree Programs*. Alexandria, VA: APTA, 2004.
10. Mior SA, McGregor M, Schut B. The role of clinical experience in clinical accuracy. *J Manipulative Physiol Ther* 1990;13:68-71.
11. Gonella C, Paris SV, Kutner M. Reliability in evaluating passive intervertebral motion. *Phys Ther* 1982;62:436-444.
12. Bybee RF, Dionne CP. Interrater agreement on assessment, diagnosis, and treatment for neck pain by trained students. *J Manual Manipulative Ther* 2004;13:178-179.
13. Cleland JA, Onksen P, Swanson B, McRae M. Attributes of expert and novice clinicians: A brief review and investigation of the differences in peripheral sympathetic nervous system activity elicited during thoracic mobilization. *Phys Ther Rev* 2004;9:31-38.
14. Cohen E, Triano JJ, McGregor M, Papakyriakou M. Biomechanical performance of spinal manipulation by newly trained versus practicing providers: Does experience transfer to unfamiliar procedures? *J Manipulative Physiol Ther* 1995;18:347-352.

The Journal of Manual and Manipulative Therapy is indexed in the Cumulative Index to Nursing and Allied Health Literature (CINAHL), EBSCO databases, and in EMBASE, the Excerpta Medica database.