To the Editor:

As part of a class I am teaching on critical analysis of developmental therapy literature, my students and I evaluated and discussed the recent article entitled "Evaluation of Physical Therapy Service for Severely Mentally Impaired Students with Cerebral Palsy" by Donald Sommerfeld, PhD, and associates (Phys Ther, March 1981). While the authors are to be commended for their interest in evaluating the efficacy of physical therapy for the severely handicapped, there are several concerns that we wish to address with regard to their methodology and conclusions.

With regard to the methodology of this study, the use of a nonrandom comparison group from a different school setting raises serious questions of internal invalidity. The statement that "normal services of an occupational therapist were available to all three groups" is vague and ambiguous. What are "normal" services of an occupational therapist? Did the frequency and length of treatment sessions offered by occupational therapy vary greatly among the three groups? In the current trend toward establishing ourselves as developmental therapists involved in treating the "whole" child rather than dichotomizing the services of occupational therapy and physical therapy, do the services of a pediatric occupational therapist or physical therapist differ that greatly?

The description of the intervention procedures is quite inadequate. While the authors briefly describe the training of the therapists involved in the study as well as the general goals of therapy, there is no attempt to describe the treatment procedures themselves. The statement that treatment consisted of "the mode or modes of treatment to which each student responded best" raises the issue that it would be impossible to isolate the effective treatment variables in this study. Serious concerns exist among us about the duration and frequency of the treatment sessions received by the direct treatment group. There are few developmental therapists who would consider that two sessions of 30 minutes duration each week are optimal or even minimally adequate for a severely handicapped child. Most neurodevelopmentally trained therapists spend a minimum of one hour per treatment session because it often takes up to 30 minutes to normalize tone before attempting to facilitate automatic reactions and normal patterns of movement.

The use of a pretest-posttest design in which each child's performance is measured only twice during the course of the study raises the question of providing a true evaluation of each child's abilities, particularly with the wide fluctuations in behavior that are observed in handicapped children. A repeated measures or multiple group baseline design would be preferable since such a design would evaluate the dependent variables over time. The use of measurable, behaviorally written therapy objectives relating directly to the goals of treatment would be preferable to the use of such dependent measures as range of motion and developmental reflex age.

Whereas this study represents an extremely important and long-overdue pilot project, it should be viewed cautiously in light of not only the authors' stated limitations, but also in light of the limitations listed above. Attempts should be made to replicate this research with added attention to correcting the methodological flaws discussed.

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REFERENCE

The Authors Respond:

Dr. Harris and associates suggest treatment sessions of one hour or more on a repetitive basis—presumably several times a week. This would limit the caseload of a school therapist to five students a day at most. From a practical standpoint, the cost of such an approach in a school setting would be prohibitive. Riley School in the Detroit area has two physical therapists serving 130 students. On the basis of Dr. Harris' suggested treatment requirements, between 13 and 26 therapists would be required, involving an annual cost up to $1 million at prevailing salary and fringe benefits rates. This presumes that such a large number of therapists could be recruited to work with this student population (consisting of severely mentally impaired students with cerebral palsy), which experience indicates is highly problematical. Because
these students, unfortunately, rarely become functioning members of society, or even capable of self care, dramatic evidence of neurodevelopmental therapy’s efficacy would be necessary to justify the tax-paying public assuming such a large expense.

Dr. Harris questions the difference between physical and occupational therapy services. According to guidelines set by the supervising school district, the physical therapist 1) develops sequential gross motor and weight bearing activities; 2) prescribes positioning, range of motion, relaxation, stimulation, postural drainage, and other physical manipulation and exercise procedures; 3) supervises use of therapy and gross motor equipment; 4) supervises use of orthopedic and medical equipment; and 5) establishes and maintains physician contact.

The occupational therapist 1) prescribes positioning for functional activities; 2) conducts oral-motor assessments and programing; 3) provides training in vocational preparatory skills; 4) designs adaptive devices and equipment; 5) designs splints for upper extremity function; 6) designs behavioral programs; and 7) teaches prework and work habit skills.

The physical therapist and occupational therapist jointly 1) provide parent and staff inservice and 2) conduct wheelchair assessment and management.

As indicated by these guidelines, physical therapists and occupational therapists bring different expertise to student training. Most occupational therapy services relate to the cognitive and social domains. Physical therapy services involve the psychomotor domain almost exclusively. In view of the broad spectrum of these students’ needs, it is doubtful whether a single-provider approach would be satisfactory.

Admittedly, the use of a nonrandom comparison group from a different school was an expedient. It would have been unethical to withhold services deliberately solely in the interests of scientific methodology.

We agree that use of repeated measures would be advantageous, given potential fluctuations in student behavior. Certainly, such a design should be considered for future studies. However, the fact that three major areas of sensory motor development were measured reliably should not be overlooked.

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