



A Combination of group therapy and consultation is as effective as individual therapy with preschoolers experiencing developmental delays

CITATION: Davies, P. L., & Gavin, W. J. (1994). Comparison of individual and group/consultation treatment methods for preschool children with developmental delays. *American Journal of Occupational Therapy, 48*(2), 155–161.

LEVEL OF EVIDENCE: IIB2b

RESEARCH OBJECTIVE/ QUESTION

The purpose of this study was to compare the effectiveness of group therapy and consultation to traditional direct therapy.

Research questions included:

1. Will preschool children receiving occupational therapy and physical therapy services demonstrate significant gains in motor skills?
2. Are motor skill levels gained by children receiving therapy in a direct treatment method different from those gained by children receiving therapy in a group and consultation treatment method?
3. Will the motor performance change measured in the clinic also be observed as increases in functional skills within the home, and skills in academic potential testing?
4. Does the rate of development made by the subjects in the present study match that of the children in the population used in standardizing the Peabody Developmental Motor Scales?

DESIGN

	RCT		Single Case		Case Control
	Cohort	X	Before-After		Cross Sectional

After the initial assessments were conducted and before the onset of therapy, two groups of 10 subjects were formed such that the groups' means matched on age, IQ, and degree of motor delay at the onset of the study

SAMPLING PROCEDURE

	Random		Consecutive
X	Controlled		Convenience

SAMPLE

N=18	M age=50.5 months	Male=NR	Ethnicity=NR	Female=NR
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NR=Not reported

PARTICIPANT CHARACTERISTICS

The subjects were selected based on the following criteria: they were 3 to 5 years of age; their hearing and vision acuity were within normal limits; they had fine or gross motor delays at least one standard deviation below their age norm as measured by the Peabody Developmental Motor Scales; they were enrolled in the preschool program at the Institute of Logopedics for at least 60 days before the start of the study; and they had been diagnosed as developmentally delayed. Children diagnosed with cerebral palsy were excluded from the study.

MEDICAL DIAGNOSIS/CLINICAL DISORDER

Developmentally delayed

OT TREATMENT DIAGNOSIS

Fine or gross motor delays

OUTCOMES

Measures	Reliability	Validity
Peabody Development Motor Scales	All measures used are standardized tests.	All measures used are standardized tests.
Vineland Adaptive Behavior Scales, Interview Edition	All measures used are standardized tests.	All measures used are standardized tests.
Central Institute for Deaf Preschool Performance Scale	All measures used are standardized tests.	All measures used are standardized tests.

Assessments were administered within the first 3 weeks of the fall term and again 7 months later during the spring term.

Outcome—OT terminology

Performance Component: fine and gross motor skills, nonverbal intelligence
Performance Area: daily living skills, communication, socialization

Outcome—ICIDH-2 terminology

Activity and Impairment

INTERVENTION

Description

- Sensory integration and neurodevelopmental treatment approaches were used in the individual therapy method.
 - In the group/consultation method, areas discussed included grasp patterns, positioning, and sensorimotor activities.
 - All interventions focused on performance components and impairment level
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- **Who delivered**
 - Occupational therapist
 - Physical therapist
 - Classroom staff members were encouraged to carry out therapeutic activities at other times throughout the week in the consultation component.
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- **Setting**
 - Individual therapy was held in children's respective occupational therapy or physical therapy clinic.
 - Most of the occupational therapy group activities and consultation sessions were held in the classroom.
 - Most of the physical therapy group activities and consultation were held in the physical therapy clinic.

Frequency

Subjects in the individual therapy group received two 30-minute sessions of occupational therapy and two 30-minute sessions of physical therapy per week. Subjects in the group/consultation therapy group received two 30-minute sessions per week, one conducted by an occupational therapist and the other by a physical therapist.

Duration

7 months

Follow-up

7 months

RESULTS

Analysis of variance (ANOVA) for the fine motor Scaled Scores showed a significant main effect for the assessment period ($F[1,16]=39.11, p<.001$).

- Neither the main effect for treatment methods ($F[1,16]=.56$), nor the interaction between the treatment method and assessment period ($F[1,16]=1.50$) was significant.
- The gains made by both treatment methods were found to be statistically significant, with $p<.01$ in both cases by using Tukey's t ratio test.

For the gross motor Scaled Scores, ANOVA revealed a significant main effect for the assessment period ($F[1,16]=19.94, p<.001$).

- Neither the main effect for the treatment methods ($F[1,16]=.08$) nor the interaction ($F[1,16]=.11$) was significant.
- Post hoc comparisons of the means for the fall and spring assessments also revealed that the gains made in gross motor performance by both treatment methods were significantly significant.

The mean Developmental Motor Quotients (DMQs) for fine motor were evaluated again with ANOVA.

- For fine motor, the main effects of the assessment period and treatment methods were not significant ($F[1,16]=.60$ and ($F[1,16]=.79$, respectively), nor was the interaction significant ($F[1,16]=.43$).
- Post hoc comparisons revealed that neither the decline of .65 by the individual therapy method nor the decline of 7.63 by the group/consultation therapy method was significant.
- For the gross motor DMQs, ANOVA found no statistically significant differences for the main effects of the assessment period ($F[1,16]=.23$) or treatment method ($F[1,16]=.0001$).
- The interaction was not significant ($F[1,16]=1.78$). Post hoc comparisons revealed that neither the increase of individual therapy method by 5.82 points nor the decline of the group/consultation therapy method by 12.23 points was statistically significant.

ANOVA tests on the composite score and each of the four subscales of the Vineland Adaptive Behavior Scales failed to demonstrate any significant differences between treatment methods.

- The main effect of the assessment period was found to be significant for the Composite Score ($F[1,16]=17.76$, $p=.001$), and three of the four subscales: Communication ($F[1,16]=6.18$, $p=.024$); Socialization ($F[1,16]=18.36$, $p=.001$); and Motor Skills ($F[1,16]=11.37$, $p=.004$).
- None of the interactions were significant.
- Use of the mixed analysis of variance procedure to analyze the composite score of the Preschool Performance Scale, which measured IQ, revealed that the main effect for assessment period was significant ($F[1,16]=7.94$, $p=.012$).
- The main effect of treatment method and interaction were not significant ($F[1,16]=.22$ and $F[1,16]=1.64$, respectively).
- Subjects receiving individual therapy demonstrated greater increases in IQ scores than those in group and consultation therapy.
- Post hoc comparisons revealed that the increase of 6 points by the individual therapy method was statistically significant, whereas the increase of 2.26 by the group/consultation method was not significant.

CONCLUSIONS

- Subjects in both the group and consultation group and the individual treatment methods group demonstrated statistically significant gains in both fine and gross motor skill levels.
- Motor gains were observed not only in the clinic, but also in the home and academic potential testing.
- There were no statistically significant differences between treatment methods on any of the assessments.
- The rate of motor skill development approximated that of the normal distribution of typically developing children.

LIMITATIONS

Biases

	Attention		Masking/blinding		Drop outs
X	Contamination		Co-intervention		

- Subjects had a wide range of motor delays, ranging from 1.3 to 8.2 standard deviation below the norm.
- There was no control group.
- Small number of subjects.
- Formation of matched groups was not described.
- Direct treatment took place in a clinic (pull-out service delivery).
- In the classroom consultation group, PT continued to pull children out of classroom, although the teacher attended.
- Not stated how the study controlled for the cross-over effect between four classroom teachers; two received in-service training and references, and two did not.

- Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

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