



Outcomes of School-Based Physical Therapy for Children with Disabilities in the United States

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Purpose and Background

- In the United States, school-based physical therapy (PT) supports the educational programs of children with disabilities; however minimal evidence exists on effectiveness of school-based PT.¹
- Evidence-based practice research methodology² used in a prospective, multi-site observational study, *PT related Child Outcomes in the Schools* (PT COUNTS).
- We undertook to describe changes in students' participation in school activity, self-care, posture/mobility, and recreation/fitness outcomes as measured by the School Function Assessment (SFA)³ & individualized goal attainment scaling (GAS)⁴.

Participants

109 PTs from 4 regions across the US; 105 (95.5%) females; mean age 46 years (SD 4.2); average 13 years (SD 9.1) working in schools

296 students with disabilities served by those PTs; mean age 7.3 years (SD 2.2), range 5 to 12 years; 35% had cerebral palsy, 30% genetic disorders, 35% other (autism, learning disability, attention deficit hyperactivity disorder, speech language disorder, developmental coordination disorder, myelomeningocele, medical issues, sensory impairment, traumatic brain injury & limb deficiency)

Gross Motor Function Classification System levels (GMFCS):

Level I	113 (38.2%)
Level II/III	117 (39.5%)
Level IV/V	66 (22.3%)

Classroom placement of students:

- 31% general education
- 39% special education
- 30% combination general & special education

Methods

At the beginning of school year each PT:

- Completed GAS, SFA, School Physical Therapy Intervention for Pediatrics (S-PTIP)^{5,6} & ethics training
- Measured GAS goals & SFA on 1- 6 students
- Completed SPTIP weekly for 6 months

After 6 months S-PTIP data collection:

- PTs rescored GAS goals & SFA on same students
- Descriptive statistics calculated for all variables. Group comparison statistics used to examine outcomes

Measures

Goal Attainment Scaling

- Student's Individualized Education Program goals were converted into sub-goals using GAS. Researchers categorized goals into posture/mobility, recreation/fitness, self-care, & academic categorizes. PTs identified one primary goal for each student.

School Function Assessment

- Criterion-referenced, standardized, judgment-based measure of child's participation in school environment, grades Kindergarten to 6th grade
- Sub-sections completed: Participation, Travel, Maintaining & Changing Positions, Manipulation with Movement, Recreation, Clothing Management, Eating & Drinking, Hygiene
- Divided SFA Criterion Change Score into groupings of: SFA <-5 (n=5-24) regressed; -5 to +5 (n=134-172) no change based on standard error of measurement; >+5 (n=109-135) improved

Results: GAS Goals

Goal Area	No Change or Regressed n goals	GAS -1 Score Improved n goals	GAS 0 Score Achieved Goal n goals	GAS + 1 or +2 Score Exceeded Goal n goals	Achieved Goal (0/+1/+2) n goals
Primary Goal 296 goals Mean Change +0.3 (SD 1.17)	21 (7%) 1 regressed	51 (17%)	105 (36%)	119 (40%)	224 (76%)
Posture Mobility 205 goals Mean Change +0.3 (SD 1.17)	18 (9%) 2 regressed	41 (20%)	62 (30%)	84 (41%)	146 (71%)
Recreation 161 goals Mean Change +0.3 (SD 1.17)	11 (7%)	28 (17%)	59 (37%)	63 (39%)	122 (76%)
Self-Care 50 goals Mean Change +0.3 (SD 1.17)	1 (2%)	11 (22%)	18 (36%)	20 (40%)	38 (76%)
Academics 82 goals Mean Change -0.3 (SD 1.35)	19 (23%) 1 regressed	22 (27%)	19 (23%)	22 (27%)	41 (50%)

Results: SFA

Physical Tasks & Participation	SFA Criterion Score Below -5 n Regressed	SFA Criterion Score -5 to +5 n No change	SFA Criterion Score Above +5 n Improved
Travel	11 (4%)	157 (53%)	127 (43%)
Maintaining & Changing Positions	9 (3%)	151 (51%)	134 (46%)
Recreational Movement	14 (5%)	155 (53%)	123 (42%)
Manipulation with Movement	9 (3%)	155 (53%)	127 (44%)
Eating & Drinking	18 (6%)	161 (55%)	114 (39%)
Hygiene	23 (8%)	160 (55%)	109 (37%)
Clothing Management	11 (4%)	172 (59%)	111 (38%)
Participation	9 (3%)	134 (46%)	148 (51%)
Task Supports: Assistance	24 (8%)	149 (51%)	117 (40%)
Task Supports: Adaptation	5 (2%)	155 (53%)	135 (46%)

Conclusions

- GAS: Students achieved & slightly exceeded expected goal attainment for primary goal (93%) & additional *posture/mobility, recreation/fitness, & self-care* goals. Goal attainment did not significantly differ for students among GMFCS levels, diagnostic groups, or between those receiving or not receiving outpatient physical therapy based on two-way ANOVAs. Students, 5 to 7 years of age had higher goal attainment for primary goal than students 8 to 12 years of age.
- SFA: Students generally improved on SFA subsections, but not beyond the standard error of measurement. Students improved the most in *Participation*, followed by *Maintaining and Changing Positions*. Students who were less than 8 years of age with higher gross motor function (GMFCS levels I to III) improved more than students who were older with lower gross motor function. There were statistically significant differences among GMFCS levels with those having Levels IV/V (lowest functional ability) showing the least improvement in all subscales except *Travel*.

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