



Journal Discussion

ARTICLE SELECTED FROM Fall 2016 :



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Developed by the APPT Knowledge Translation Committee

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- Bridge the gap between knowledge creation and knowledge use
- Support the APPT goal of promoting excellence in care and evidence-based pediatric physical therapy practice.

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Journal Discussion

Welcome!

- Please mute your microphone to avoid noise feedback during the presentation.
- You are welcome to type in the chat box.
- This session will be recorded for future viewing

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Journal Discussion

- When discussion questions are presented, please indicate if you would like to share by typing your name in the chat box.
- We will call on you and unmute your microphone so you may share with the group.
- Once you are finished sharing, we will mute your microphone for you.

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ARTICLE SELECTION:

Student Outcomes of School-Based Physical Therapy as Measured by Goal Attainment Scaling

Chiarello LA, Effgen SK, Jeffries L, Mccoy SW, Bush H. Student Outcomes of School-Based Physical Therapy as Measured by Goal Attainment Scaling. *Pediatr Phys Ther.* 2016;28(3):277-84.

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LEARNING OBJECTIVES:

Following this journal discussion, participants will be able to:

1. Discuss key aspects of the critical appraisal for the selected journal article.
2. Analyze the relevance of this knowledge to their own setting.

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STUDY PURPOSE/ HYPOTHESIS

Primary purposes:

- to describe the individualized outcomes of students receiving school-based physical therapy (PT) services
- to determine if goal attainment, as measured by Goal Attainment Scaling (GAS), differed by gross motor ability and age

Secondary objective:

- to explore if goal attainment differed by diagnostic groups



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Background info:

- With the reauthorization of the Individuals with Disabilities Education Improvement Act (IDEA) of 2004, a major emphasis was placed on *accountability*: student achievement of functional and academic outcomes p. 277
- “Individualized outcomes are important for evaluation of the effectiveness of school-based services and progress monitoring of student education.” p. 277
- Goals set based on *individualized assessment* are more responsive in measuring change over time compared to standardized assessments p.277
- Studies suggest that *students receiving school-based PT make progress toward/achieve* their individualized outcomes p.278

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- GAS measures individual progress toward achievement of individual goals - a specific set of goals for the student that typically includes a 5-point possible range of outcomes p. 278
 - more robust statistical analysis than 3-point scale
 - criterion-referenced, responsive to individual meaningful changes
 - applicable to all levels of functional ability
 - feasible and affordable
- “An understanding of goal attainment for students based on *functional level, age, and focus of the goal* will enable PTs to reflect on how students change and should provide guidance for establishing and monitoring progress on meaningful individualized outcomes.” p. 278,

NOTE: this study was a part of a national study of school-based PT services and student outcomes—*PT related Child Outcomes in the Schools* (PT COUNTS). The details of this study are further described in the PT COUNTS article, Spring 2016.





RESEARCH METHODS: Study Design

- Type: prospective, longitudinal, observational, practice-based evidence design
- Participants/Randomization:
 - multi-site, 4 regions of the US (Northeast, Southeast, Central, Northwest)
 - physical therapists with 6 or more students on their workload meeting the inclusion criteria providing a coded list of all students to the study site coordinators, who would randomly select 6 students to recruit
 - if the therapist had < 6 students on their workload who met the inclusion criteria, all students were recruited
 - 296 students participated with complete data from 109 PTs
- Length: 6 months of school-based physical therapy intervention

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RESEARCH METHODS: Population

- diagnoses: table 1 p. 279
 - cerebral palsy (n = 103; 34.8%)
 - Down syndrome (n = 46; 15.5%)
 - other genetic disorders (n = 40; 13.5%)
 - global developmental delay (n = 32; 10.8%)
 - autism (n = 21; 7.0%)
 - other (n = 54; 18.2%)
- majority of students were 5-7 years of age (59%), white (72%), and male (56%)
- majority of students at GMFCS levels I to III (78%)
- classroom settings:
 - 31% general education
 - 39% special education
 - 30% combination

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- Inclusion Criteria:
 - students with disabilities
 - kindergarten thru sixth grade (ages 5-12 years)
 - receive special education and the related service of a physical therapist at least monthly
- Exclusion Criteria:
 - students w/a progressive disability, such as MD, for which IEP goals might be to maintain function and not to achieve new, higher levels of function
 - student planned to move out of the district before the end of the school year
 - student had major surgery planned that might affect physical performance or limit school attendance
 - student had a history of low school attendance (absences greater than 30% the previous year).

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RESEARCH METHODS: Measures

- GMFCS p.278
 - 5 level system
 - classifies children w/cerebral palsy up to 18 years of age
 - based on performance in daily life
 - current gross motor function in daily living
 - emphasis on mobility and sitting
 - has evidence of content, construct, and discriminative validity and inter-rater reliability
 - used by researchers as an indication of overall functional motor ability level for all students in the study
- GAS p.279
 - individualized, goal-based, criterion-referenced outcome measure of change in performance of a behavior
 - criteria is measurable & meaningful
 - performance assigned values
 - baseline=-2
 - progress toward expected outcome
 - expected outcome =0
 - exceeding outcome expectations = +1 and +2
 - demonstrated content validity, interrater and intralATA reliability, and responsiveness
- more responsive to changes in functional performance than standardized measures p.280

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RESEARCH METHODS: Procedures

- therapists completed online training module on GAS and passed a post-training assessment
- PTs identified IEP goals related to participation in school activities/ supported by their physical therapy, table 2 p. 280
 - posture/mobility
 - recreation/fitness
 - self-care
 - academics
- research team
 - reviewed goals to ensure criterion for GAS format
 - consensus process for classification of GAS goals into outcome areas and “learning levels”(acquisition, fluency, generalization)
- within each outcome area, each student had 1 primary goal
- after ~ 6 months, PTs assessed goal attainment which was verified by at least 2 IEP team members (71-94%)



“outcome areas”

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RESEARCH METHODS: Statistical Analysis

- Analyses conducted for the student’s primary goal and each of the goal areas, described by both learning levels and goal attainment
 - Scores described overall, by age group and by GMFCS level
- Two-way analysis of variance (ANOVAs) using age group and GMFCS level were used to determine differences in goal attainment between groups, and whether an interaction existed between age and GMFCS groups
 - Post hoc 2-group comparisons used in the event that the overall F-test was found to be statistically significant
- One-way ANOVAs used to determine differences in goal attainment by diagnostic groups. Significance level of .05 used for all tests
- SAS (version 9.3, SAS institute Inc, Cary, North Carolina) used for all statistical analyses

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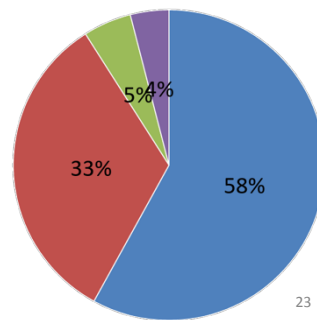
Results:

Each student had 1-4 goals:

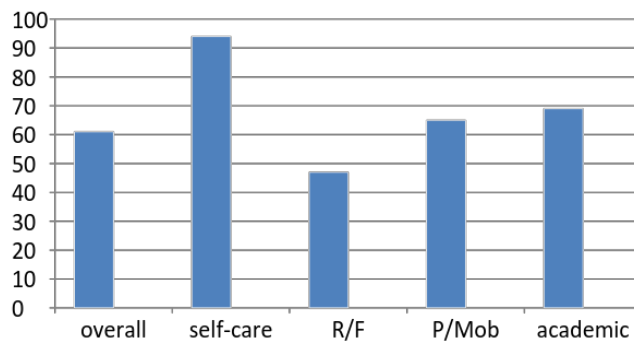
- posture/mobility n=205
- recreation/fitness n=161
- academic n= 82
- self-care n=50

From these goals, the 1 primary goal for each student:

- posture/mobility 58%
- recreation/fitness 33%
- self-care 5%
- academics 4%



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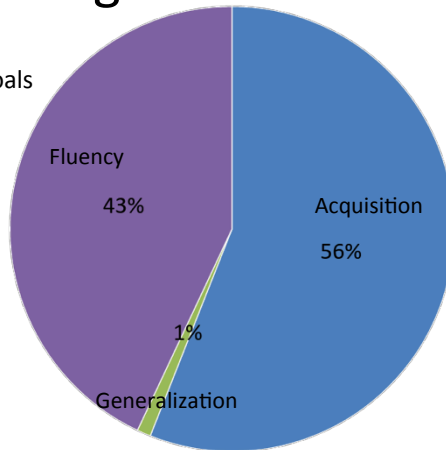


Performance of goal behavior addressed & measured within a school activity or routine

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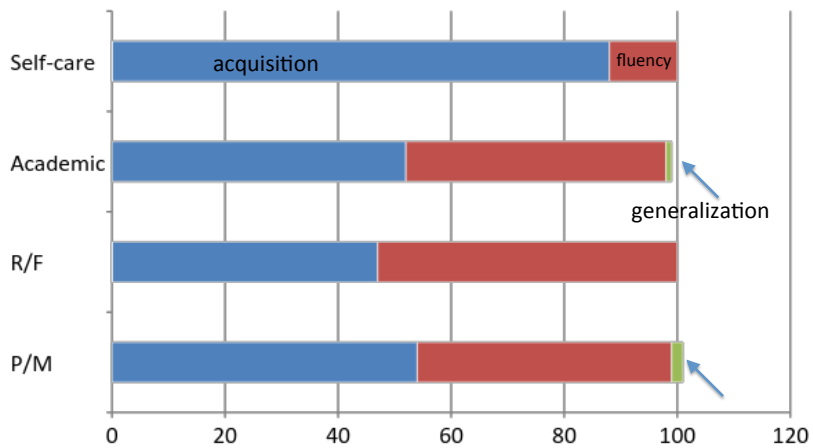
Learning Level of Goals:

- table 2 p. 280
- for the primary goals



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Learning Level of Goals by Category



*recreation/fitness category was the only goal category that had a higher percentage of goals at the fluency learning level

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GAS (end of year)

- table 3 p. 281
- students on average slightly *exceeded* their expected goal levels for:
 - primary goal (mean=0.3, SD=1.17)
 - posture/mobility (mean=0.6, SD 1.26)
 - recreation/fitness (mean=0.4, SD 1.16)
 - self-care (mean=0.4, SD 1.20)
- students, on average, *made progress* but did not meet their expected goal levels for
 - academics (mean=-0.4, SD 1.20)

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Percentage of Level Of Goal Attainment

- table 4, p. 281
- 77%-98% of students improved on their individual goals, depending on goal category
- 50%-76% of students achieved or exceeded their expected goal attainment (0/+1/+2)

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- no *gross motor function by age interaction* was found for primary or individual goal categories
- goal attainment was not significantly different by *gross motor function (GMFCS)*
 - primary goal
 - individual goal categories
- Goal attainment did vary by *age* for the primary goal (table 5)
 - students 5-7 years had higher goal attainment than students 8-12 years of age
- student goal attainment for primary/individual goal categories did not differ by *diagnostic group*

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AUTHOR DISCUSSION:

- First study to examine nationwide in US the individualized outcomes of students receiving school-based PT
- The majority of goals:
 - were related to *posture/mobility*
 - at the *acquisition learning level*
 - were addressed & measured within the *context of a school activity or routine*
- Students
 - made progress
 - achieved their individualized goals
 - many surpassed their expected functional, adaptive, and academic-related goals
- Younger students had higher goal attainment than older students for primary goals and recreation/fitness goals

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- Considerably fewer goals were in areas of self-care and academics
 - Encouraged PTs to use expertise in movement and adaptive function to broadly support academic and functional outcomes
- Majority of goals were addressed/measured within the context of a school activity or routine = supporting students' participation during the school day
- A minority of goals for recreation/fitness were addressed in the context of school routine/activity such as recess or PE classes
 - Encouraged PTs and teachers to collaborate to better support student participation
- Only 1% of skills were at generalization level—may indicate that little attention was given to ensuring that students use their skills within a variety of meaningful contexts in school setting

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- Majority of goals were at the acquisition level of learning, followed by fluency level
 - “PTs focus on students learning motor skills and performing them with greater independence, speed, ease, and safety”
- Finding that students receiving school-based PT services made progress and achieved their individualized goals is
 - positive
 - consistent with previous research
 - suggests that these service support student outcomes

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- PTs were accurate in anticipating expected progress for students of varying gross motor functional levels & diagnostic categories
- GAS was responsive to changes that individual students made; supports its use as a meaningful outcome in school-based PT practice
- the finding that older students had lower goal attainment for primary & recreation/fitness goals than younger students
 - therapists may need to reflect on what supports older students need to optimize progress
 - therapists may have underestimated the progress that younger students could make
 - younger students could have received more services to support their goals
 - learning is non-linear & complex
 - students 8-12 years old may be focusing their energies & progressing in other areas of development (academics) and less on mobility & recreation

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- Meaningful intervention starts with a good outcomes assessment
- GAS may promote collaboration in identifying & monitoring goals
- GAS can help the IEP team focus service delivery on
 - client-centered perspective
 - academic & functionally relevant priorities
- GAS is useful for progress monitoring and documentation of outcomes

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“We encourage therapists to **invest in outcomes assessment, collaborate with the IEP team,** and develop and monitor **meaningful student individualized goals** using the GAS system to optimize students’ educational experience.”

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**REVIEWER
DISCUSSION:**

STRENGTHS:

- Attempt to use larger sample size (PTs and students)
- Use of multiple sites across 4 regions of the US—may increase generalizability to larger population
- Accurate validity and reliability measures

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LIMITATIONS:

- Generalizability to a larger population remains limited due to wide variability in school-based PT practice across US
- As an observational cohort study, design cannot establish causal relationship between services and the outcomes, limiting its findings and suggestions

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- Use of GMFCS to classify gross motor function of all children, though only validated in children with CP
- Findings limited to children 5-12 years of age (59% 5-7 year olds), and more appropriate for children with higher gross motor ability
 - smaller percentage (22%) of students at GMFCS levels IV and V
 - 38% level I
 - 40% level II and III

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The study used the Goal Attainment Scaling as an outcome measure of change in performance of a behavior.

1. In your current setting, how does use of the GAS fit with your **current system** of goal writing and monitoring?
2. If you have integrated use of GAS in your current setting, what factors supported this change in your practice? What barriers did you encounter?

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The student goals were categorized into (4) areas: posture/mobility, recreation, self-care, academics.
Consider your caseload.

1. What **broad goal categories** can you identify for the population with whom you work?
2. How is **participation** factored into the goals and plan of care?

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The discussion encourages a **team approach** in writing meaningful goals including the child (student), parents, school personnel in the goal-writing process to set the stage for intervention planning.

1. What factors have helped you develop a team approach in goal writing?
2. What barriers have you encountered?

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The discussion includes a statement that some school-based therapists have reported that some school personnel are not supportive of therapists providing services within the classroom.

1. What factors have helped you provide/consult on services in “real-world” settings (parks, playgrounds, classrooms, home)?
2. What barriers have you encountered?

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The discussion indicates that examination of the services for younger and older students is being conducted to determine whether younger students received more service time than older students.

1. Consider your caseload. Are 3-7 year olds receiving more of your service time than 8-12 year olds?
2. What factors might contribute to decreasing therapy service time for children with special healthcare needs and/or physical disability as the child ages?

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**CERTIFICATE OF
COMPLETION:**

A (1) hour "Certificate of Completion" will be provided to those journal discussion participants who attend the discussion

AND

complete this online survey.

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susid=53083&survey_id=163617](http://survey.winksite.com/xhtml/ms_survey_intro?susid=53083&survey_id=163617)

Copy and paste this link in your web browser search bar.

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CEU OPPORTUNITY:

A (1) hour CEU course for this article is available:



A SPECIAL THANKS FOR THE FOLLOWING CONTRIBUTIONS TO THIS JOURNAL DISCUSSION:

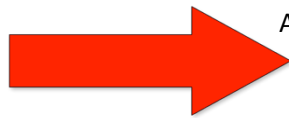
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PowerPoint by: Angela Fritz, PT, DPT / Karen Gage Bensley, PT, DPT, MS, PCS

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