

POSTER SYMPOSIUM

New Measures Coming Soon: Early Head Start/Head Start University Partnerships for Measurement Development Projects

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Carta: In 2004, the Administration for Youth and Families funded eight measurement development projects to develop new instruments or further validation of existing instruments, in order to provide new knowledge for guiding practice and improving programs, aimed at improved outcomes for children and families.

- **Partnership to Develop Meaningful Outcome Measures for Early Head Start Children and Families**

Judith J. Carta, Dale Walker, Kathleen M. Baggett

Numerous measurement tools are available for assessing infants and toddlers, but persons who regularly work with young children have limited means of knowing whether their intervention practice is helping a child or parental caregivers make progress toward important outcomes. Usually, assessments are not conducted often enough to provide practitioners and parents with ongoing information about an individual child's progress, or when children's data are aggregated together, whether an intervention is working. Therefore, a gap exists between assessments available and the evaluation tools needed to inform practitioners trying to influence children's progress in programs.

Individual Growth and Development Indicators (IGDIs) are recently developed tools that can help fill this gap. They provide information about children's growth toward outcomes or information about change in the quality of parent-child interaction. This poster illustrates the process engaged with EHS program partners to further development of two IGDIs: the Early Communication Indicator and the Indicator of Parent-Child Interaction. The Early Communication Indicator is one of a set of IGDIs that has been developed for measuring the progress of infants and toddlers. For the ECI, rates of children's communication are determined by scoring the number of individual gestures, vocalizations, words and multiword utterances to portray children's growth in ability to express their wants and needs as demonstrated in a 6-minute play-based standardized situation. Because measures are administered quarterly, rates of communication growth are determined and made available through a website that supports data entry by interventionists and instant feedback on rates of growth for individual children or for groups of children in programs.

The Indicator of Parent-Child Interaction (IPCI) is another measure under development with EHS partners to examine changes in responsivity and negativity that might result from intervention. The measure involves observing the behavior of parents and children during four

structured analogue activities: free play, book reading, dressing, and a distraction task. A set of ratings is given on the relative frequency of a set of parent (or other caregiver) behaviors and child behaviors after they are observed in each of the four activities. A parent or other caregiver is rated on the relative frequency of occurrence of both positive behaviors, such as conveying acceptance, following the child's lead, using descriptive language, or using stress-reducing strategies; and negative behaviors such as using restrictions and intrusions or using a harsh voice. A child is rated on relative frequency of positive behaviors such as sustained independent play, or negative behaviors such as aggression, tantrums or withdrawal. This poster describes research conducted on the ECI and IPCI to document their reliability and validity as well as their practical utility.

- **Development of Early Arithmetic, Reading, and Learning Indicators for Head Start Populations**

James C. DiPerna, Paul L. Morgan, Puiwa Lei

Despite increased interest in promoting the development of early skills to prevent academic difficulty at school entry, few measures exist for monitoring growth in specific early academic skills during the preschool years. In addition, many published measures with adequate reliability and validity evidence for diagnostic purposes often lack sufficient curriculum coverage at the preschool level (U.S. Department of Health and Human Services, 2002). Progress-monitoring is one way to regularly assess children's growth in early academic skills and enhance instructional planning (Deno, 1985). Through the use of progress-monitoring measures, teachers are better able to change or modify their instruction to promote children's mastery of key academic skills.

One type of progress-monitoring, Curriculum-Based Measurement (CBM), is a well established approach for tracking children's growth in academic skills during the elementary years. CBM has strong reliability and validity evidence to support its use for progress-monitoring in math. The measures or "probes" used in CBM are brief at typically 1-2 minutes, standardized, direct, and can be used by teachers to guide a child's instruction over time. This is because students' performance on these measures reflects progress toward the accomplishment of long-term goals within the curriculum. The purpose of the Early Arithmetic, Reading and Learning Indicators (EARLI) Project is to develop a set of progress-monitoring measures that assess key early literacy and mathematics skills for children in Head Start.

This poster presentation reports the initial design, development, field-testing, and outcomes for the EARLI Literacy measures. These measures consist of six probes. The first, Sound Deletion, requires children to identify the sound remaining in a word after omitting part of the word. The second probe, Segmenting, requires children to identify the first-, middle-, or last sound in a simple word. The third literacy probe, Expressive Vocabulary, requires children to name an object from a picture or drawing. The fourth probe, Alphabet, requires children to say the "ABCs" aloud to the examiner. The fifth, Letter Naming, requires children to read individual letters and correctly say the sound associated with the letter. The final probe, Letter Sound, asks children to identify the letter that corresponds with a specific sound.

Probes were administered to approximately 300 Head Start children on three occasions during the 2005-06 academic year. To assess concurrent validity of the EARLI probes, selected subtests from the Woodcock-Johnson III Tests of Achievement (WJ-III; Woodcock, McGrew, & Mather, 2001) were administered to a subsample of participating children. Analysis of the collected data suggested appropriate item and scale qualities for the pilot literacy measures. Alpha coefficients for the scales ranged from adequate to excellent, and the probes appeared to be sensitive to developmental differences. Though additional research is necessary, the EARLI Literacy measures may eventually help Head Start teachers adjust their instruction in ways that further increase the number of children who successfully transition into kindergarten.

- **Validity of Mealtime Behavior Self-Report of African American and Caucasian Early Head Start Mothers of Toddlers**

Mildred Horodynski, Manfred Stommel, Holly Brophy-Herb, Lorraine Weatherspoon

The primary purpose of this study was to obtain valid and reliable outcome measures for behavioral intervention trials that promote healthy nutrition and feeding in low-income African American and Caucasian families. The importance of developing culturally sensitive measures for assessing parent-toddler mealtime feeding behaviors is stressed. The project combines qualitative and quantitative data collection and analytic approaches.

Phase I has been completed, involving focus group sessions with members of the target population discussing the wording and content of previously developed instruments to be appropriate for use with low-income African American families. Phase II, which is currently ongoing, involves a cross-sectional survey to determine the psychometric properties of a self-report parent-toddler mealtime instrument. Simultaneous observations by study staff are used to validate the self-report measures. Furthermore, these measures will allow EHS staff to evaluate the progression of toddlers' self-regulated feeding behaviors and toddler-parent mealtime interactions through the identification of specific areas in which to target appropriate intervention strategies.

Data from a sample of 199 Early Head Start mothers and other female caregivers of toddlers are available for analysis. Of these, 154 participants are Caucasian and 45 are African American. Caregivers were 17 to 66 years old with a mean age of 28 years, and toddlers were 6 to 46 months of age, with a mean age of 25 months. There were similar distributions in both racial groups. However, African Americans differed from Caucasians in two respects: they were less likely to be married (6.7 % versus 35.2 %), and more likely to have some college education (51 % versus 38 %). African Americans were also more likely to be employed than Caucasians (68 % versus 44 %).

Trained data collectors conducted the survey and recorded observations in the participant's home. This visit consisted of informed consent, height and weight measurements of toddler and mother, observation of a mealtime, and completion of the questionnaire. Visits typically lasted 60 to 90 minutes, and participants received a \$25 cash incentive.

The self-report survey instrument is divided into six sections containing a total of 53 statements that characterize typical mealtimes in terms of environment and behavior of caregiver and toddler. For example, an item exploring television watching reads: “I watch TV during mealtime.” An item probing caregiver stress reads: “I am upset when my child doesn't eat.” In response, the caregiver indicates on a 5-point Likert response scale how often the behavior occurs, from “never” to “always.”

Confirmatory factor analysis is used to fit specified factor models and test whether they are invariant across the racial comparison groups. Preliminary findings suggest that six self-report scales can be used to compare African Americans and Caucasians with respect to caregiver decision making, caregiver distress during mealtimes, toddler self-directedness in eating, toddler picky eating habits, socialization patterns at mealtime, and the role of television during mealtime. In addition, validity coefficients were presented to indicate the degree of congruence between these self-report measures and the recorded observations of the study staff.

- **Validating an Observational Assessment for Infants and Toddlers**

Samuel J. Meisels, Kristy Beachy-Quick, Ilona Helin

This project investigates the reliability and validity of *The Ounce Scale*, a functional assessment of young children's development from birth through 42 months of age (Meisels, Dombro, Marsden, Weston, Jewkes, 2003). *The Ounce Scale* is a performance assessment used in Early Head Start programs to monitor infant, toddler, and young preschoolers' development and to guide individualized instruction. It is comprised of three elements: observation records, family albums, and developmental profiles and standards. The observation records provide a structured format for organizing direct observations of children's performance by teachers and caregivers. The family albums engage parents in documenting observations of their children's development and provide parents with a range of activities to promote their children's development. Developmental profiles and standards allow staff to evaluate their observations of the children and determine whether the child is “developing as expected” or “needs development” in six areas of development, based on explicit performance standards.

The project utilizes a multimethod strategy that combines both quantitative and qualitative techniques. The overall design of the project is that of a cross-sectional, concurrent validation. Ratings on the Developmental Profiles are compared to scores on the Bayley Scales of Infant Development-II (Bayley, 1993), the Preschool Language Scale-4 (Zimmerman, Steiner & Pond, 2002), and the Ages and Stages Questionnaire: Social-Emotional (ASQ: SE; Squires, Bricker & Twombly, 2002), for 30 children at each of eight age levels: 4 months, 8 months, 12 months, 18 months, 24 months, 30 months, 36 months, and 42 months. The sensitivity and specificity of the scale is assessed, and internal reliability and external validity of the scale are determined using Rasch analyses and other Item Response Theory models. The utility of the scale for planning instruction and facilitating understanding of individual children is evaluated by means of interviews with 25 teachers and five program coordinators.

Early Head Start program partners are the Ounce of Prevention Fund Educare Center, the Chicago Public Schools National Teachers Academy, the Carole Robertson Center for Learning,

Erie Neighborhood House, and the Childcare Network of Evanston and Infant Welfare Society of Evanston. Additional funding for the project has been provided by Pearson Early Learning, the publisher of *The Ounce Scale*.

- **Tracking Bilingual Children's Vocabulary Development: Reporter- and Language-Related Measurement Challenges**

Barbara Alexander Pan, Jeannette Mancilla-Martinez, Shaher Banu Vagh

Language development, and particularly vocabulary, is a major focus of intervention for EHS/HS. Appropriate, accurate, and user-friendly tools to monitor children's early vocabulary development is critically important. Parent report measures such as the MacArthur Communicative Development Inventories (CDIs; Fenson et al., 1993) and the MacArthur Inventarios del Desarrollo de Habilidades Comunicativas (Jackson-Maldonado et al., 2003) have demonstrated validity for children acquiring either English or Spanish. However, tools for tracking vocabulary development of toddlers and preschoolers acquiring two languages are lacking, as the proportion of Head Start children acquiring English at school and another language at home is steadily increasing.

The project on which this poster is based is motivated by the observation that a *single* reporter, either parent or teacher, rarely has a complete understanding of a bilingual child's vocabulary development in both languages. Thus, the intent is to explore the feasibility of integrating parent and teacher reports on bilingual children's vocabulary development in Spanish and English. The project is being conducted in partnership with Dimock Community Health Center, Action for Boston Community Development, and Greater Lawrence Community Action Council, all of which are EHS/HS programs in eastern Massachusetts. At the request of one partner, the study was modified to include children acquiring only English as well as those exposed to both Spanish and English.

Data are presented on 82 children for whom both parent and teacher vocabulary reports are available at one or more ages (24, 27, 30, 33, 36 months). Sixty-one % of the children are from homes where Spanish, or both Spanish and English, are spoken; 39 % are from homes where only English is spoken. Nearly all parents, both Spanish- and English-speaking, judged themselves able to report on children's English vocabulary. This poster considered only children's English vocabulary.

The MacArthur vocabulary checklists were designed for use by parent reporters. Most parents have only one child of a given age and language level, thus making discrimination among vocabulary skills of multiple children unproblematic. An exploratory facet of this study is reliance on teachers as another source of information about children's vocabulary. Some preliminary issues addressed are congruence between parent and teacher reports of the same child's vocabulary, whether teachers are able to discriminate among children in their reporting, and whether teachers can make time for completing vocabulary checklists on a regular basis. Results to date indicate that where parent-teacher reports on English-language vocabulary diverge, parents tend to report their child using more words than teachers do. Furthermore teachers sometimes report children using fewer words over time even though English is the

language of instruction. Future analyses will compare the composition of vocabulary reported by teachers and parents to see whether teacher reports are more context-specific, for example curriculum-related, and whether teachers and parents are equally accurate reporters, using relative to direct assessment measures. Teachers completed approximately 87 % of the vocabulary checklists during the requested timeframe, with support from administrative program staff found to be critical.

- **PICCOLO: Measuring the High Notes of Parenting Interactions**

Lori Roggman, Mark Innocenti, Gina Cook, Vonda Jump, Katie Christiansen, Jim Akers

PICCOLO (Parenting Interactions with Children: Checklist of Observations Linked to Outcomes) is being developed as an easy-to-use, reliable, and valid parenting measure for infant-toddler programs, such as Early Head Start. Early Head Start home-based programs, and similar programs that aim to promote positive parenting, have specific measurement needs. They need to track positive parenting outcomes with a valid measure of parenting that can be linked to child outcomes and is easy and reliable to use. By measuring positive parenting behaviors, programs will be better able to individualize their services to specific parent needs and to track program outcomes overall to guide program improvement.

PICCOLO is an observational measure that can be used to rate positive parenting behaviors that are linked, in the research literature, with optimal child outcomes in multiple domains. After reviewing the research literature, we identified 4 domains of positive parenting correlated with desirable child outcomes. “Affection” includes physical and verbal affection, positive emotional expression, positive regard, and positive statements. “Responsiveness” includes responding to the child’s cues, following the child’s lead in play, referring to objects the child looks at, and mutual engagement in play. “Encouragement” of autonomy includes nonintrusiveness, praise of skills, active support of play, exploration, initiative, and independence. “Teaching/talking” includes shared play with objects, cognitive stimulation, explanations, questions, conversation, storytelling, and interactive book reading.

As part of the process to develop PICCOLO, observers rated objective nonredundant descriptions of these parenting behaviors, taken from the research literature, on parenting interactions in video clips. Video clips were available from an archive of over 2,000 videotaped interactions between parents and their infants and toddlers ages 1 to 3 years. PICCOLO was tested on observations of three ethnic or cultural groups: European Americans, African Americans, and Latinos. The number of PICCOLO items was further reduced by selecting items based on interobserver agreement and reliability, validity in predicting child outcomes, and variability among families.

The latest version of PICCOLO, in all four domains, is presented along with internal consistency and inter-rater agreement indices. Validity testing thus far shows that PICCOLO domains predict child outcomes, at statistically significant levels, in cognitive, language, and social development areas. Activities we have identified as appropriate for PICCOLO observations in Early Head Start programs are those that fit home visit goals, can be done in small space, keep both parent and child engaged, and last at least 10 minutes. A list of specific suggestions for activities is

provided along with guidelines for videorecording the observations.

Lessons learned from program partners have highlighted the value of PICCOLO for identifying strengths and gaps in parenting behavior. Home visitors can then use this information to individualize their strategies for promoting parenting to support children's early development. Furthermore, the use of PICCOLO has helped home-based programs identify training needs for home visitors. The final version of PICCOLO will be available in September 2007.

- **Incorporating an Attachment Q-Set into Relationship Assessment and Support in Early Head Start**

Susan Spieker, Marie-Celeste Condon

The University of Washington-Puget Sound Educational Service District (PESD) Partnership is assessing the use of a research based assessment tool measuring parent child relationships in the toddler years. PESD Early Head Start (EHS) is a mature, relationship-focused program. The project involves the collaboration of program staff, the research team, and the evaluation team. The EHS program staff and the research team have learned ways to incorporate the Toddler Attachment Sort-45 (TAS45; Kirkland, Bimler, Drawneek, McKim, & Schölmerich, 2004) into the program's existing ways of working with parents. The TAS45 is a 45-item research observation instrument based on the 90-item Attachment Q-Sort (AQS; Waters, 1987). The AQS has been validated as a measure of attachment (van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004) and as a robust measure of intervention effects (Bakermans Kranenburg, van IJzendoorn, & Juffer, 2003). TAS45 was used in the national Early Childhood Longitudinal Study-Birth Cohort (<http://nces.ed.gov/ecls/Birth.asp>) on nearly 10,000 toddlers at 24 months of age.

Several characteristics of the TAS45 make it useful for adoption by EHS programs. It can be completed in five minutes, immediately after a home visit, on a single one-page form. The results can be entered into a web-based program by the home visitor or by an office assistant. The program produces a visual graph of the relationship, and these snapshots can then be compared over time. Nine dimensions, or 'hotspots', are captured by the graphs and can be readily interpreted on their own or used to create Security and Dependence scores (similar to those generated by the AQS) and also the classic ABCD Strange Situation attachment categories.

Program staff is finding ways to use the TAS45 for assessment, intervention, and recording change over time in parent-child relationships. The TAS45 is being validated with the research teams' regular assessments of program children's language and social emotional development at 9, 12, 15, 18, 24 and 36 months of age. If it is a valid measure of attachment, it should be associated with these outcomes (van IJzendoorn, Dijkstra, & Bus, 1995).

The research team and the program staff are collaborating on training materials, and plans are underway to disseminate these to two other local EHS programs. The evaluation team has assessed the factors that contribute to or hinder the adaptation of the training and use of the TAS45 by program staff in both the EHS partner and dissemination programs. The project results will contribute to the body of knowledge about the adaptation of research-based tools into best practices of EHS programs that offers different program options.

The poster symposium presented some case illustrations of home visitor use of the TAS45 and preliminary data on the associations between certain ‘hotspot’ dimensions and child communication (Communication and Symbolic Behavior Scales (CSBS; Wetherby & Prizant, 1993), language (Preschool Language Scale-4 (PLS-4; Zimmerman, Steiner & Pond, 2002), and social competence and problem behavior (Brief Infant-Toddler Social and Emotional Assessment (BITSEA), Briggs-Gowan & Carter, 2001).

- **The Development of a Structured Home-Visit Interview**

Leanne Whiteside-Mansell, Robert H. Bradley, Nicola Connors, Patti A. Bokony, Dee M. McLemore, Carol Lee

This project aims to create a comprehensive, user-friendly measure, The Family Map, to assess important aspects of the family and home environment. Meeting that challenge means that Head Start staff must efficiently assess the family and home environment in ways that lead to productive family engagement. The Family Map assesses the most critical aspects of healthy child development targeted by Head Start performance standards.

Partnering with two large Head Start centers, one in a rural setting, the other in an urban setting, The Family Map development includes input from Head Start partners and families. The project utilizes a multistage approach to measurement development, including a reexamination of published literature, secondary data analyses of public data, consultations with experts, Head Start administrators and staff, and families, and multiple pilot tests so that information from preliminary versions of the measure helps produce a high-quality final measure.

The structure of The Family Map allows for discretionary use of items from three areas: (a) Sustenance, Surveillance, Stimulation, Support, Structure, Social Integration; (b) Family Conflict and Cohesion, Social Support, and (c) Substance Abuse, Mental Health, Depression. The first class of constructs are conditions/experiences that children experience directly and are presumed to directly influence children’s well-being. For the most part, these are parental actions directed at the child or that are done on behalf of the child, such as arranging certain objects within the home; but they also include physical or material aspects of the home setting.

The second class of constructs includes background setting conditions within the family environment. The child may experience them directly but they are not typically directed to the child. These conditions, sometimes referred to as family style or family climate conditions, may directly influence child well-being. They are presumed to give meaning to things children experience directly and affect children’s responses to their other experiences.

The third class includes characteristics of the parent that may influence other parenting behaviors. The rationale for including measures of key constructs from each class is to produce a comprehensive assessment of those aspects of family life that may be strongly implicated in children’s adaptive functioning. However, coverage is not equal across the three classes. Relatively more attention is given to the first area because HS agencies tend to have a greater capacity to address these issues within the program.

A pilot version of the instrument has been tested, and modifications are being made based on input from teachers and administrative staff and from statistical analysis of internal consistency and validity. The final product will include an instrument comprised of separate modules to be used together or individually as the agency determines. This presentation describes the process of the development, the lessons learned in the development of a measure in partnership with Head Start professionals, and preliminary results from the evaluation of the near-final version of the instrument.

Raikes: Why are these measures important? Increasingly, programs are interested in systematic assessment of children's development, parenting or program quality, and they also recognize the need to aggregate findings for purposes of program improvement and for funders. The Head Start and the Early Head Start Performance Measures Projects identify key constructs for assessment. The Early Head Start Measures Compendium guides programs in tools to use, but also fills apparent gaps in measures technology. Good Start Grow Smart and No Child Left Behind programs emphasize outcomes, and new programs such as the Bounce Learning Network include assessment, individual, and aggregate feedback of findings as a matter of course. The field is moving the watermark when it comes to assessment, and the current body of work makes an important contribution.