The Keys to Interactive Parenting Scale (KIPS): A Practical Observational Assessment of Parenting Behavior

Marilee Comfort and Philip R. Gordon
Comfort Consults, LLC

M Comfort & PR Gordon (2006). The Keys to Interactive Parenting Scale (KIPS): A Practical Observational Assessment of Parenting Behavior. *NHSA Dialog: A Research-To-Practice Journal for the Early Intervention Field, Volume 9(1), 22-48.* Alexandria, VA: National Head Start Association Research and Evaluation Department.

Abstract

Because of the well-documented role caregiving plays in child development and socialization, family service programs commonly aim to improve parenting. Despite the common emphasis on parenting behavior, few programs regularly assess it, because existing observational tools, designed primarily for research purposes, prove too cumbersome for use in a family services setting. The Keys to Interactive Parenting Scale (KIPS) was designed to fill the need for a convenient observational assessment of parenting behavior in the family services setting. Developed through three stages involving literature review, psychometric testing, and practitioner feedback, KIPS demonstrates reliability and validity. A field test with home visitors from Early Head Start and Parents As Teachers programs showed that providers could reliably use the scale with the families they served and highly valued the information obtained. KIPS provides a practical means of assessing parenting behavior, and can be used to guide intervention, coordinate teamwork, and evaluate program outcomes.

Value of Nurturing Early Parenting

Research shows convincingly that the early transactional relationship between caregivers and their children guides children's healthy development (Guralnick, 1998; Sameroff & MacKenzie, 2003, Shonkoff & Phillips, 2000). Though socialization research has revealed a complex array of factors that contribute to children's development, it stresses the importance of parenting (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). Brazelton and Greenspan (2000, p. 2) insist that, "Nurturing emotional relationships are the most crucial primary foundation for both intellectual and social growth." For children to be ready to learn in school, they need stimulating early learning experiences and a solid socio-emotional underpinning gained from nurturing interactions with parents and other caregivers in the first years of life (Greenspan & Shanker, 2004; Ewing Marion Kaufman Foundation, 2002; Ounce of Prevention, 2003). The child development literature demonstrates clearly that effective early parenting prevents disease and dysfunction, increases educational achievement, and promotes healthy child development (Brooks & Rice, 1997; Brooks-Gunn, Berlin, & Fuligni, 2000; Fagan, 2000; NICHD ECCRN, 1998; Shore, 2002), school readiness (Brooks-Gunn & Markman, 2005) and well-adjusted adolescents (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999). Among the most convincing research is a 40-year longitudinal study of multi-ethnic infants at high risk due to biological or developmental delays that shows positive parent-child interaction in early childhood was a significant protective factor for successful adult functioning, characterized by positive family relationships, satisfying employment, and lack of substance abuse or criminal record (Werner & Smith, 1992; Werner, 2000). Best practices in pediatric and infant mental health care, early

childhood education and intervention, and child maltreatment prevention endorse family-centered, strengths-based care, and parent involvement (Cabrera, Tamis-LaMonda, Bradley, Hofferth, & Lamb, 2000; Dixon & Stadtler, 2002; Family Support America, 2005; McWilliam & Bailey, 1993; Zigler & Muenchow, 1992). Because of the well-documented role caregiving plays in child development, parenting services are routinely integrated into nearly all early intervention programs for families with children birth to five years (Brooks-Gunn et al., 2000). Several of the nationwide programs are sizeable, as evidenced by 905,235 families served in Head Start, 55,000 in Early Head Start (U.S. DHHS, 2004), 47,500 families in Healthy Families (Diaz, Oshana, & Harding, 2004) and 332,907 families in Parents As Teachers (Parents As Teachers National Center, 2004).

Gap in Parenting Assessment

Despite the ubiquity of programs aimed at improving parenting, and extensive efforts devoted to caregiver education and support (Unger, Brown, & Park, 2003), no observational assessment tool of parenting/caregiving has achieved wide acceptance within family service settings. Service providers can choose from numerous published instruments to assess development of young children's cognitive, language, play or motor skills. However, a missing piece in the family assessment puzzle is parenting behavior. Numerous self-report measures are available that assess knowledge and attitudes regarding parenting practice (e.g., Bavolek & Keene, 1999; Parks & Smeriglio, 1986; Strom, 1995). However, what someone says they do and what they actually do can differ widely (Lovejoy, Weis, O'Hare, & Rubin, 1999). Thus, self-report measures of parenting yield partial information for the family assessment puzzle. By using a structured observation with a tool that focuses the observer's attention on key behaviors, one can assess what the parent actually does when interacting with his or her child.

Unfortunately, only research tools, which are labor-intensive, complex, and require extensive training, have been available to observe and assess parent-child interaction. Such instruments are especially inappropriate for family service providers who may not have advanced degrees or training in family assessment (Bailey & Simeonsson, 1988; Krauss, 2000). Despite the numerous research assessments, there is no observational parenting instrument commonly used by practitioners (Kelly & Barnard, 2000; Mahoney, Spiker, & Boyce, 1996; Munson & Odom, 1996). Daro (2005), a leader in child abuse prevention asserts, "In the absence of reliable, baseline measures as to the quality of parenting and the incidence of abusive or neglectful behaviors within the general population, we will always be handicapped in trying to determine if home visitation efforts are successful in preventing aggregate levels of maltreatment" (p.238). The Keys to Interactive Parenting Scale (KIPS), a brief, family-centered, strengths-based parenting assessment tool, was designed to address this gap. KIPS aims to provide information to guide interventions that build more responsive parenting, and ultimately, greater child and family well-being.

Calls for Improved Parenting Behavior Assessment

The need for practical parenting behavior assessment tools has been widely recognized by parents and professionals. National surveys of parents with young children report clear requests for family-specific parenting information (Child Trends, 2002; Civitas, Zero to Three, & Brio

Corporation, 2000; Commonwealth Fund, 1996). Reviews of early intervention efficacy stress the need for accurate, valid, useful and non-intrusive instruments to measure parent-child interaction (Guralnick, 1998; Halpern, 2004; Kelly & Barnard, 2000; Mahoney et al., 1996). Despite the existence of research instruments, no instrument has gained common use in the family services field (Farran, Clark, & Ray, 1990; Mahoney, Spiker, & Boyce, 1996; Munson & Odom, 1996). After reviewing the research on early intervention program outcomes and noting that only modest effects on parenting were found, Halpern (2004) suggested this may be in part, "Because validating a new parenting measure theoretically and psychometrically takes so much work, most evaluators have chosen off-the-shelf measures of parenting that may not be related to a program's focus or sensitive to important differences in parenting in the population served by a program" (p.8).

For nearly 20 years, one of the authors has conducted trainings on a research instrument she co-authored, the Parent/Caregiver Involvement Scale (P/CIS; Farran, Kasari, Comfort, & Jay, 1986). The P/CIS is a proven 38-item observational rating scale that rates the amount (frequency), quality (warmth, acceptance, or intensity) and appropriateness (match to child's developmental needs) of 11 parent behaviors and 5 general impressions of the affective climate and the learning environment. The scale has shown satisfactory reliability and validity in studies with children who are normally developing, at high environmental risk, and with disabilities (Farran et al., 1987; Blasco, Hrncir & Blasco, 1990). Researchers have used the P/CIS to examine the association of parent behavior with parent characteristics (Fagan, 1996; Helm, Comfort, Bailey & Simeonsson, 1990; Jones & Unger, 2000; Perez et al., 2005), with child characteristics (Blasco et al., 1990, Huntington, Simeonsson, Bailey, & Comfort 1987, McGrath, Sullivan, & Seifer, 1998), and with the combination of parent and child factors (Simeonsson, Bailey, Huntington, & Comfort, 1986). Other researchers have employed the P/CIS to investigate assessment of parent-child behavior in the context of family functioning (Hayden et al., 1998) and early intervention services (Comfort & Farran, 1994; Unger, Tressel, Jones, & Park, 2004). Although proven effective for research purposes, the P/CIS fails to meet practitioners' needs. Major barriers to practitioners' use of the existing observational parenting assessments are: 1) excessive time for assessment; 2) irrelevance of many items to intervention 3) difficulty retaining reliability; and 4) the inability of paraprofessionals to reach or retain reliability. An executive director of a statewide family service program serving 40 counties who had long sought a parent behavior assessment commented, "…We are rethinking the use of our current measure of parent-child interaction and have not yet decided what tool to use. As a statewide system serving over 8,000 families per year, we would like something that the home visitors could administer with reliability and an absence of bias." These concerns, which are common to existing research scales, prevent them from being used in family services programs.

KIPS addresses these barriers by providing a short, clinically relevant parent-child assessment tool specifically designed for family service providers to use in their daily service settings with families of young children from two to 71 months of age. Another barrier commonly expressed is the extensive time and cost for training to reliability. We have developed an online training system that provides a convenient and low-cost means of becoming certified on KIPS and retaining reliability. By producing a practical scale and an online training and support system, we hope to overcome the major barriers to parenting assessment in service programs.

KIPS Development

The goal in developing KIPS was to design a practical observational tool for providers to assess the quality of caregiving behaviors that influence a young child's development. This work is based on the premise, proven by research (Shonkoff & Phillips, 2000) and held by many early intervention programs (Shonkoff & Meisels, 2000), that nurturing parenting is a pivotal contributor to children's healthy development. KIPS was developed through three prototypical iterations over a five-year period.

Statistical Analyses. To construct the first KIPS prototype, the P/CIS was subjected to descriptive, correlation, and factor analyses. Aiming to produce a more clinically relevant and less complex scale, we conducted secondary analysis of P/CIS data collected in a federally-funded longitudinal study of 214 low-income urban families enrolled in early intervention services (Jones & Unger, 2000). Descriptive analyses verified previous research experience, showing that 4 of the 11 P/CIS behaviors (e.g., goal setting, teaching) were infrequently observed during free play. These behaviors were excluded from the prototype. Items related to quality were chosen over frequency items, because quality of parental involvement has been shown to be more important than quantity in relation to healthy child outcomes (Pleck and Masciadrelli, 2004). This focused our analyses on the P/CIS ratings of quality of behaviors and appropriateness to the child's needs. To maintain an adequate sample size in determining the factor structure, 13 items with Ns of 140 or greater were selected for exploratory principal axis factoring analysis with varimax rotation and iterations for stable communalities (SPSS, 1998). From analysis of P/CIS data (listwise n = 130), a single factor emerged, with item loadings of 0.61-0.85 that explained 60% of the variance. The 13 items are listed below with their factor loadings:

P/CIS Item	Factor Loading
Appropriateness of Responsiveness of Caregiver to Child	.847
Appropriateness of Directives	.804
Quality of Playful Interaction	.769
Quality of Verbal Involvement	.769
Quality of Responsiveness of Caregiver to Child	.768
General Impression of Atmosphere	.768
Appropriateness of Playful Interaction	.765
Quality of Directives	.755
Appropriateness of Verbal Involvement	.749
Quality of Control Over Child's Activities	.743
Appropriateness of Control Over Child's Activities	.696
Quality of Positive Statements	.684
Appropriateness of Positive Statements	.606

The results supported the use of the 13 analyzed items as a starting point for the first KIPS prototype.

Clinical Review. The next step involved clinical review of the factor items, with consultation from a family therapist, who administered an urban early intervention program and was one of the investigators responsible for collecting the analyzed P/CIS data. We aimed to select items most meaningful to intervention, that is, behaviors that were observable, modifiable, and measurable. As a result of clinical review, we retained 10 items, discarded 2 items (Quality of Verbal Involvement, Appropriateness of Control), and reframed 1 item (Appropriateness of Verbal Involvement) to link conversations about play activities to daily experiences. Finally, a P/CIS item regarding physical handling, withheld from the factor analysis due to low Ns, was added and expanded to include touch. Nurturing touch is strongly supported by infant mental health specialists for strengthening parent-child relationships and has shown positive associations with child health and behavior (Field, 2003). The resulting 12 items formed the first KIPS prototype. All items were rephrased as strength-based questions with simpler provider-friendly language for the behavioral anchors.

Provider Focus Groups. To gather preliminary data on the first KIPS prototype's face and content validity, we conducted three provider focus groups in 2000 with practitioners at Early Head Start and Early Intervention programs for families of children with identified delays or disabilities. Twenty-six child/family service providers participated, including infant/toddler specialists, special instructors, occupational, physical, speech/language and family therapists, and clinical supervisors. Prior to discussion of the prototype, we asked the participants to complete a survey to rate the usefulness of each of the selected parenting behaviors for assessing parent-child interaction. We posed six questions related to parent-child assessment to each group. For example: How do you currently assess parent-child interaction? What behaviors or qualities are important when assessing parent/caregiver-child interaction? Participants' responses verified that they were not using a parent behavior assessment instrument. The survey results showed 85% agreement regarding the usefulness of 10 items on the first prototype, and strong support for the remaining 2 items if wording were modified. In the focus group discussion, the participants emphasized the need for clear, jargon-free language for the items and anchors. When probed about gaps in the scale, one group suggested adding an item on limit-setting to facilitate intervention involving appropriate discipline alternatives. The focus group results guided the item selection and wording for the next KIPS prototype.

To gather further feedback on the first KIPS prototype, we presented sessions at professional conferences (Comfort, 2001; Comfort, Jones, & Unger, 2000). Participants confirmed the need for a brief observational assessment and expressed enthusiasm for the prototype. For example, the director of a university-based early childhood assessment center foresaw opportunities to observe and assess caregiver behavior during initial multidisciplinary evaluations of children with suspected developmental delays in order to identify specific family goals and to monitor progress. A home-based early intervention teacher envisioned coaching families on effective parenting strategies in home/community activities. A parent educator was eager to use KIPS to identify parents' needs for community services, such as home visits, parent support groups or family counseling.

Literature Review. The P/CIS was developed in the early 1980s. In order to align the KIPS prototype with current research, we reviewed the recent literature concerning parenting influence on child development (e.g., Cabrera et al., 2000; Hirsh-Pasek & Golinkoff, 2003; Kumpfer & Alvarado, 2003; Shonkoff & Meisels, 2000; Shonkoff & Phillips, 2000; Shore, 2002; Zeanah, 2000; Zero to Three, 1994) national program evaluation reports (e.g., Women's & Children's Health Policy Center, 2001; Love et al., 2002), and parent education curricula (e.g., Eliot & Flanagan, 1999). This review verified the relevance of the parenting behaviors selected for KIPS, but revealed the need for wording changes and expansion of behavioral anchors.

Based on the focus group results and literature review, the second KIPS prototype was generated in the following manner. We added items on Limits and Consequences, Consistency of Responses, and Exploration/Curiosity. We combined two items on positive reinforcement into a single item called Encouragement and combined two items on synchrony and harmony of interactions into Response to Emotions. All anchors were expanded to maximize the range of quality of parenting behaviors assessed. We designed KIPS behavioral anchors to describe inappropriate caregiver behaviors in ratings of 1, moderate quality caregiver behaviors in ratings of 3 and exemplary caregiver behaviors in ratings of 5. By so doing, practitioners can use KIPS to identify a caregiver's profile of strengths and areas for improvement in adapting to his or her child's needs. Further, they can track progress along a continuum from lesser to greater quality behavior for each of the 12 KIPS behaviors. The guidance provided by recent research and provider input resulted in an instrument much further removed from the PCIS (released in 1986) than initially envisioned.

This second KIPS prototype was tested by having a panel use it to score videos of parents and children playing together. In actual use, the item regarding consistency proved problematic. Although consistency of behavior is important, caregivers who consistently showed poor quality behaviors were scored highly on the consistency item. This confounded scoring with a simple 1 to 5 scoring rubric. Thus, consistency was woven into the upper anchors of several items. In addition, we expanded the item on touch/physical handling to include synchrony of physical interactions between caregiver and child. As children age and become more independent, the panel noted less touch, but still observed important physical interactions (e.g., eye contact, proximity, moving to child's eye level) between the caregiver and child. These changes resulted in the third prototype, which was used for the initial psychometric study, and included the following 12 items:

KIPS Third Prototype Items

1. Sensitivity of Responses	7. Touch/Physical Interaction
2. Response to Emotions	8. Limits & Consequences
3. Encouragement	9. Open to Child's Agenda
4. Promotes Exploration/Curiosity	10. Reasonable Expectations
5. Involvement in Child Activities	11. Adapts Strategies to Child
6. Language Experiences	12. Supportive Directions

The ninth item is shown below to illustrate KIPS scoring.

9. How open is the Caregiver to the Child's agenda? ☐ **NOB**				
1	**2**	**3**	**4**	**5**
CG organizes or controls the choice of C's activities, and shows little flexibility whether or not C cooperates.		CG sometimes chooses activities and C sometimes chooses activities.		CG follows C's lead, guiding C to pursue his/her own activities. CG supports and extends C's choices and interests.

KIPS Initial Psychometric Study

To assess the inter-rater reliability, internal consistency, and construct validity of KIPS, a convenience sample of 101 videotaped caregiver-child play sessions from four previous projects using the P/CIS were selected. The samples included:

1) Recovering Mothers — Mothers (n=33) within 1 month of enrollment in a residential substance abuse treatment program for women and their young children;
2) Head Start Fathers — Fathers and stepfathers (n=30) participating in a study of a Head Start parenting support program;
3) Community Sample 1 — Caregivers (mothers, fathers, grandmother; n=12) filmed for a feasibility study to develop an online KIPS training prototype;
4) Community Sample 2 — Caregivers (mothers, fathers, grandmother; n=26) filmed for a research training project for psychology students.

The 101 families included in the psychometric study self-reported their characteristics as shown in Table 1.

Table 1
Characteristics of Families in Initial Psychometric Study

	N[a]	Percent
Relation to Child		
Mother	61	60%
Father	34	34%
Stepfather	4	4%
Grandmother	2	2%
Caregiver Age		
20-35 years	70	70%
36-45 years	26	26%
46-55 years	3	3%
66-75 years	1	1%
Caregiver Race/Ethnicity		
African American	59	59%
Caucasian	27	27%
Latino	9	9%
Asian	4	4%

	N[a]	Percent
Other	1	1%
Household Income		
Low Income	72	72%
Middle Income	28	28%
Child Gender		
Female	53	53%
Male	48	47%
Child Age		
2-12 months	19	19%
13-36 months	29	29%
37-48 months	24	24%
49-71 months	28	28%
Child Special Health or Developmental Needs	8	8%

Note. [a] Number of children or caregivers out of 101 in study.

For this initial psychometric study, the first author trained two coders to scoring reliability of 90% or above (percent of items in agreement within 1 point with expert rating). Of the 101 caregiver-child videos, the two coders scored 30 videos in common using the third KIPS prototype. In addition, Coder 1 scored 40 unique videos and Coder 2 scored 31 unique videos with the KIPS prototype. Coder 2 also scored 31 videos with the P/CIS, which Coder 1 had scored with the KIPS prototype.

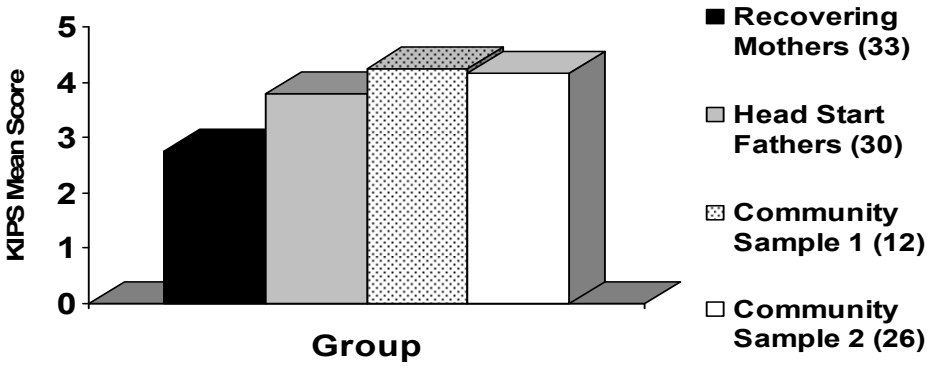
KIPS Reliability. The coders were asked to record the time spent viewing and coding videos. Videotaped play sessions required an average of 19.11 minutes (SD=3.7) for observation, with an additional 5.5 minutes (SD=5.01) required for KIPS scoring. During the study, scoring checks for 30% of the videos averaged 96% agreement (coder 1) and 90% agreement (coder 2) with the expert coder (percent agreement on item scores within 1 point on the rating scale), indicating that scoring competence was maintained. Percent agreement was the preferred method for establishing agreement on this ordinal rating scale because, like other rating scales, agreement within 1 point is the expected criteria and can be easily calculated by providers (Farran, Clark, & Ray, 1990). As an additional test, we performed Pearson correlations to examine expert-coder reliability (Anastasi, 1988). The results showed satisfactory correlations between expert and coders for KIPS mean scores (coder 1: $r = .93$, $p < .001$; coder 2: $r = .88$, $p < .001$). High internal consistency was demonstrated by coefficient alphas of 0.89 within each sample.

KIPS Construct Validity. Mean scores for the third KIPS prototype were calculated by summing the 12 item ratings and dividing by the number of items scored (excluding items not observed). The relations of demographic characteristics (e.g., relation to child, marital status, caregiver education, race/ethnicity, gender, and age of child) to mean scores were examined within each sample by conducting ANOVAs or correlations, as appropriate. No significant relationships were found for any demographic variables. Since demographics for sample subgroups differed substantially from one another, statistical adjustments were used to examine the association of KIPS and P/CIS scores for 31 caregiver-child videos. A pooled within-group

correlation (within sample membership groups; Sockloff, 1975) [1] showed a significant association of KIPS and P/CIS mean scores (r = .37, *p* = .05). Additionally, pooled within-group correlations for P/CIS subscales of Amount of parent/caregiver involvement, Quality of involvement, and Appropriateness of involvement were performed. Of these three correlations, only the Quality mean scores showed significant association with KIPS mean scores (r = .38, *p* =.047). This finding is congruent with the design of KIPS to focus on the quality of caregiver behaviors.

An ANOVA of KIPS mean scores in relation to sample membership was done to further explore validity. The results, depicted in Figure 1, indicated that one group, the recovering mothers, showed significantly lower KIPS scores than the other three groups (F=27.58, *p* < .0001*)*. This is not surprising, as these mothers were just beginning to re-build their lives, their parenting skills, and their relationships with their young children.

Figure 1. Comparison of KIPS Means By



KIPS Face Validity. As an ongoing assessment of face validity for the third KIPS prototype, at three national conferences (Prevent Child Abuse America 2004, Family Support America 2004, Parents As Teachers 2005) we conducted the following assessment of the prototypes' items. In each session, prior to presenting the KIPS items, participants working in dyads were asked to generate a list of behaviors that they thought would be important to assess with the caregivers they serve. We then recorded the behaviors generated by the group on a flipchart. Next, we presented the 12 KIPS items. Participants themselves assessed which of the items on the list were addressed as the individual KIPS items were introduced. In all but one session, the KIPS items addressed all of the participants' listed behaviors. The one behavior listed by a participant that did not match a KIPS item was consistency. As mentioned above, consistency was incorporated into the anchors of several items, rather than being rated as a separate behavior. Considering that this assessment has been conducted with more than 400 individuals representing a wide range of parenting services, the third KIPS prototype demonstrated high face validity across a wide spectrum of providers.

[1] Pooled within-group correlation is a partial correlation, adjusting for group differences on both of the correlated variables.

KIPS Field Test

To be useful, practitioners must be able to reliably administer KIPS with caregivers in their own case load. Can a practitioner objectively use the instrument to assess the behavior of a parent with whom they regularly work? With support from the National Institute of Child Health and Human Development, we partnered with a statewide Parents As Teachers Program (PAT) and an Early Head Start Program (EHS) to conduct a field test to answer this question.

Provider Participants. Twenty family service providers (FSPs) (10 from Parents as Teachers-Delaware, and 10 from the Early Head Start Program/Health Federation of Philadelphia were recruited for the study. The participating providers reported the characteristics shown in Table 2.

Table 2
Characteristics of Providers Participating in KIPS Field Test

Characteristic	PAT Providers [a] Percent/Mean (Range)	EHS Providers [a] Percent /Mean (Range)
FSP Gender	100% Female	100% Female
FSP Age		
26-35 years	50%	10%
36-45 years	20%	40%
46-55 years	30%	40%
66-75 years	---	10%
FSP Race/Ethnicity		
African American	10%	70%
Caucasian	80%	20%
Hispanic	10%	10%
FSP Education		
High School	---	20%
Some College	---	20%
Associates	20%	10%
Bachelors	40%	---
Masters	40%	50%
Years Working in This Program	6.1 (1-18)	4.4 (1-10)
Age Range of Children Served		
Birth to 3	60%	100%
Birth to 4	20%	
Birth to 5	10%	
No response	10%	
Years Working with Children/Families	12.0 (1-26)	16.1 (6-30)
Work Status		
Full Time	30%	90%
Part Time	70%	10%

Characteristic	PAT Providers [a] Percent/Mean (Range)	EHS Providers [a] Percent /Mean (Range)
Average Caseload	19.4 (5-35)	21.5 (6-52)
Home Visit Frequency		
Monthly	100%	20%
Weekly	---	80%

Note. [a] 10 Participants in each provider group.

The participating providers were all female, and all but one had more than one year's experience working with families with young children. Their race and ethnicity reflected the populations they serve.

Training Procedures. Eight hours of classroom training were provided separately for each study site. The training started with a brief presentation of research on the importance of parenting behavior in promoting child development and the value of directly assessing parenting behavior. After this introduction, the training on specific KIPS items commenced. Each behavior was introduced, followed with practice rating the specific item. To provide practice opportunities, brief digitized video segments of a caregiver and child at play were shown and the participant was asked to rate them using the KIPS anchors as a guide. The ratings were then discussed. For each item at least two examples were presented. After presenting the first three KIPS items, the participants were challenged to rate a video using the first three items simultaneously. This was done to reinforce rating skill of previous items and to break up the routine. Similarly, the participants rated videos using items four through eight and nine through 12. Practicing with multiple items mentally prepared the learner for the challenge of objectively rating sessions using all 12 items. To build competence, the participants practiced rating a video with items 1 through 8, followed by two videos rated with items 1 through 12. The participants then completed a certification examination that required rating all 12 KIPS items.

By the end of the training, all staff participants' scores were at least within 80% agreement with expert scores. On the first examination, the average agreement with expert ratings (within 1 point per item) was 85.6% for the PAT group and 95.9% for the EHS group. Only one participant in each training required extra coaching to achieve the 80% agreement certification criteria. In coaching, we reviewed the participants' previous scores and discussed their reasoning to make an educational diagnosis. Once the reason for the participant's difficulty was ascertained, the participant was coached accordingly. In the PAT case, the FSP had trouble moving from her usual focus on the child to the parent's behavior. In the EHS case, the FSP was confused by the wording of two of the items. After the providers were certified to reliably score KIPS, they were trained to use the miniDVD camcorders. The providers were instructed to video capture 20-minute caregiver-child play sessions in the home or a familiar community setting, that included 15 minutes of free play and 5 minutes of clean-up, if developmentally appropriate. When introducing the sessions to families, providers were instructed to ask families to play as they normally do, using toys, books, or objects available in the setting.

Family Participants. The program coordinators randomly recruited 100 families from their FSPs' case loads to represent a diverse set of families. One hundred families were recruited (50

PAT, 50 EHS). T-tests and Chi-square tests showed many significant differences between PAT and EHS family characteristics, as shown in Table 3.

Table 3
Characteristics of Families Participating in the KIPS Field Test

Characteristic	PAT Families [a] Percent/Mean (SD)	EHS Families [a] Percent/Mean (SD)
Community Setting		
Rural-Small City (127,000-500,000)	100%	----
Large Inner City (1,518,000)	---	100%
Relation to Child		
Mother	83%	66%
Father	15%	12%
Grandmother	2%	10%
Other	---	12%
Caregiver Gender		
Female	85%	84%
Male	15%	16%
Caregiver Age in Years	29.1 (7.62)	26.9 (9.58)
Race/Ethnicity ***		
African American	15%	94%
Caucasian	61%	---
Hispanic	20%	4%
Asian	2%	---
Biracial	2%	---
Other	---	2%
Caregiver Education ***		
Less Than High School	7%	36%
High School Graduate/GED	20%	46%
Some College	38%	10%
College Graduate or Beyond	35%	8%
Caregiver Employment*		
Unemployed	31%	65%
Employed Part-Time	18%	12%
Employed Full-Time	49%	16%
In School/Job Training	2%	2%
Disabled	---	4%
Marital Status ***		
Single	28%	70%
Married	70%	26%
Separated	2%	4%
Children in Family ***	1.2 (.57)	2.6 (1.54)

Characteristic	PAT Families [a] Percent/Mean (SD)	EHS Families [a] Percent/Mean (SD)
Child Gender		
Female	65%	48%
Male	35%	52%
Child Age in Months **	19.1 (9.72)	29.2 (18.14)
Child Special Health or Developmental Needs *	9%	26%
Months in Program	16.2 (10.08)	17.3 (21.98)
Home Visit Intensity ***		
Once per Month	98%	---
Every 2 weeks	2%	8%
Weekly	---	83%
Other		9%
Receive Other Family Services *	15%	34%

Notes. [a] N of PAT= 46, N of EHS=50; *p <.05; **p =.001; ***p <.0001

By recruiting from an urban Early Head Start program, and primarily rural and suburban Parents as Teachers sites, we obtained a diverse spectrum of caregivers in the sample.

Rationale for Study Measures. Measures collected for the field test included data on caregiver and child personal characteristics, caregiver knowledge of child development, parenting confidence, and engagement in services. Parent-child interaction research shows that a number of parental factors (e.g., caregiver age, ethnicity, education, gender, caregiving support) and child factors (e.g., child age, gender, developmental abilities) may be related to the quality of parenting behavior (Crockenberg & Leerkes, 2000; Lamb, 2004; McLoyd, Hill, & Dodge, 2005; Wakschlag & Hans, 2000; Kelly & Barnard, 2000). Accurate knowledge of child development is an essential underpinning for developmentally appropriate expectations of caregivers when interacting with young children. Armed with realistic expectations, caregivers can more easily adapt their behavior to each child's individual needs, behaviors and interests. FSPs devote a major portion of their time and energy to teaching families about child development stages and individual behavioral styles. The expected outcomes of this teaching are more knowledgeable and confident caregivers who demonstrate more nurturing parenting behavior. Home visiting programs report that positive engagement between staff and family powerfully motivates caregivers to develop strong caregiver-child relationships, associated with parenting knowledge and skills (Musick & Stott, 2000), and child cognition and language (Farran, 2000). Engagement builds rapport that facilitates caregivers' learning of developmental milestones, developmentally appropriate interactions, and stimulating experiences for their children (Brooks-Gunn et al., 2000; Erickson & Kurz-Reimer, 1999; Kelly & Barnard, 2000).

Measures. We examined the associations of KIPS scores with five other instruments that assess a series of factors of interest to family service programs, and which previous research has shown to be associated with parenting behavior. These other instruments included multiple data sources and formats (caregiver self-report questionnaires, FSP rating questionnaire, and

independent observational assessment). In addition to the KIPS assessment, each participating caregiver completed three self-report measures at the time of the video session. First, the Family Information Form, which was developed for this study, requested information on child and caregiver demographics, any special health or developmental needs, and description of the length and frequency of home visiting services. Second, the Maternal Self-Efficacy Scale (MSES, Teti & Gelfand, 1991), a 10-item questionnaire, was modified slightly to simplify the language for caregivers. The MSES asked the caregiver's perception of how easy it is to do specific tasks required of caregivers of young children, such as understand what the child wants when fussing, keep the child amused, and know what the child enjoys. Responses are set on 4-point scales from 1) Not at all easy to 4) Very easy. The last item was reworded to make it less judgmental; changing it from "In general, how good a parent do you feel you are" to "In general, how easy is it to be your child's parent?" The MSES has shown satisfactory internal consistency (alpha=.86). Self-efficacy total scores are related to PSI Sense of Competence on the Parenting Stress Index (r= -.75, p<.001) and to observational ratings of parental competence during parent-child interactions (r= .47, p<.001). Third, the Survey of Parenting Practice (SPP, Shacklee & Demarest, 2003) measured caregivers' perceptions of their knowledge, confidence, ability, and actions regarding parenting practices. It was designed to measure the outcomes expected from the Born to Learn™ Curriculum developed for Parents As Teachers programs. The 12 items are formatted in a user-friendly format that asks caregivers to report where they are on a diagramed "parenting ladder" with 7 steps from Low (0) to High (6). The items query the caregiver's perception of his/her knowledge, confidence, ability, and actions regarding various parenting practices. SPP has shown satisfactory test-retest reliability (r=.872) and significant differences between past and present scores for parenting practices with intervention (p<.004).

In order to examine the association between caregiving behavior and the child's playfulness, we scored all parent-child play videos assessed with KIPS, with overall ratings of extent and intensity of child playfulness adapted from the Test of Playfulness (ToP, Okimoto, Bundy, & Hanzlik, 1999). ToP was designed to assess the skill (ease of performance), intensity (degree), and extent of playfulness (percent of time) of a child engaged in free play with his/her caregiver, using 24 items set on 4-point scales (0-3). Rasch analyses of goodness of fit indicated a reliable scale for use with children who develop typically or atypically. Children's playfulness has been positively related to parental responsiveness for children with motor delays (mothers r =.62, p = .004; fathers r =.51, p =.022, Chiarello, Huntington, & Bundy, in press) and to improvement in parent-child interaction after intervention with families of children with developmental delays (Okimoto et al., 1999).

Finally, the FSPs completed the Staff Rating of Caregiver Engagement (SRCE, adapted from Unger et al., 2004) regarding each caregiver who participated in the study. The SRCE consists of six items that measure the FSP's perception of the caregiver's involvement with program staff and services during the past three months. Examples of items include "Was attentive and listening," and "Seemed emotionally engaged." The measure was changed from a 3-point to a 5-point rating scale ranging from 1) Hardly Ever (0-20%) to 5) Almost Always (81-100%). Caregiver-staff engagement in services has been positively associated with observed caregiver-child interaction using the P/CIS (β =.24, p =.004, Unger et al., 2004).

We expected that KIPS scores would not be significantly related to child age or gender of child or caregiver, but significantly correlated with caregiver age and education and to race/ethnicity before adjusting for poverty-related variables such as unemployment (Bradley, Corwyn, McAdoo, & Garcia-Coll, 2001; Kelly & Barnard, 2000). We expected moderate positive associations of KIPS with ToP, due to the relationship of quality parenting behavior and children's involvement in play (Okimoto et al., 1999). Likewise, we expected moderate associations of KIPS with MSE, SPP and SRCE, as caregivers with increased knowledge of child development, parenting confidence, and engagement in services have been shown to exhibit higher quality parenting behaviors (MSES, Teti & Gelfand, 1991; Unger et al., 2004).

Field Test Results. Seventeen FSPs performed five KIPS assessments apiece. One PAT provider had a small case load and the supervisor could recruit only four families, but two FSPs in her program assessed six parents apiece. From the 100 recruited families, 100 videos were submitted, and 95 were considered KIPS scorable (45 PAT, 50 EHS). One FSP submitted only four videos, and none was deemed scorable because the FSP conversed with the caregivers throughout each play session. All data from this provider were omitted from the analyses. One video from another FSP was not scorable because the child missed her nap and was too fussy to engage in play.

KIPS Reliability. FSP scoring on KIPS was considered in agreement when within one point on the 5-point scale with two expert ratings. The expert rater agreement was 96.9% (SD=6.1) (within 1 point per item) for the 95 videos. As an additional test of expert raters, we performed Pearson correlations to examine expert-expert reliability. The results showed satisfactory correlations between the two experts for KIPS mean scores ($r = .90$, $p < .001$). Overall, the FSPs showed 92.4 % (SD=14.3) agreement with the experts for the 95 scorable videos [PAT 91.2% (SD=16.1), EHS 93.5 % (SD=12.5)]. Our practical milestone of agreement for the field test was the number of providers retaining 80% agreement with expert ratings. Only one provider of the 19 submitting scorable videos did not meet the 80% agreement criterion. There were no significant differences between percentages of agreement with expert scores for paraprofessionals (94.9%) as compared to professionals (91.0%). Internal consistency of expert ratings for KIPS showed coefficient alphas of .95 for the PAT group and .96 for the EHS group.

KIPS Validity. KIPS expert mean scores were significantly different between programs [PAT=4.03 (SD=.64), EHS=3.29 (SD=.74), $t=-5.17$, $p < .0001$]. To explore validity, pooled within-group correlations (within program status groups; Sockloff, 1975), were calculated due to the many differences in family characteristics between PAT and EHS programs. Pooled within-group correlations of KIPS with child and caregiver demographics showed no significant associations with child demographics (e.g., age, number of children in family, special needs). As commonly found (Kelly & Barnard, 2000), parenting scores were significantly correlated with caregiver age ($r = .28$, $p = .007$), education ($r = .23$, $p = .024$), employment ($r = .31$, $p = .007$), marital status ($r = .25$, $p = .028$), and race/ethnicity ($r = .23$, $p = .048$). However, an ANOVA of the effects of race/ethnicity on KIPS, with covariates of the other four significant variables, showed that all statistical significance disappeared when these demographics commonly related to poverty were included in the analysis. This finding reflects the results of Bradley and colleagues (2001) in their national study of caregiving environments in diverse families where the effects of poverty were more strongly related to caregiving than those of ethnicity.

Using pooled within-group correlations again, KIPS scores were significantly correlated with staff ratings of caregiver engagement in services (r = .39, p <.0001). The significant pooled within-group correlation with caregiver engagement was expected; as it has been shown to correlate with P/CIS scores (Unger Tressell, Jones, & Park, 2004). Promoting high engagement is widely valued as best practice, yet poses constant challenges within early intervention programs (Brooks-Gunn & Markman, 2005; Fantuzzo, Tighe, McWayne, Davis, & Childs, 2002; Halpern, 2000) and family-school partnerships (Weiss, Kreider, Lopez, & Chatman, 2005) aimed at enhancing child learning experiences.

KIPS scores were significantly correlated with the extent (r = .49, p <.0001) and intensity (r = .51, p <.0001) of child playfulness. The correlation of the child's playfulness with KIPS score may relate to an increased support and responsiveness of the parent to the child's interests and needs.

KIPS scores were not related to the two parent self-report measures of parental efficacy and parenting knowledge, confidence, and skills. However, the two self-reports did significantly correlate with each other (r =.24, p =.017). As found in other studies (Lovejoy et al., 1999), the finding that parenting self-perceptions did not correlate highly with an objective assessment reinforces the importance of using observational measures to aide service programs in monitoring parenting progress and evaluating parenting outcomes.

KIPS Utility and Practicality. To assess the utility and practicality of KIPS, the FSPs completed surveys after KIPS scoring of their families and also participated in focus groups several weeks after submitting their KIPS scores. The survey asked the participants to rate questions on 5-point Likert Scales (1-Strongly Disagree to 5-Strongly Agree). Table 4 summarizes the mean percent agreement for selected items (agree + strongly agree/total *100).

Table 4
Provider Responses to Selected Items on KIPS Feedback Survey

Survey Item	PAT [a] Percent	EHS [a] Percent
KIPS provides useful information to assess parenting behavior.	88.9%	100%
The information I gained is valuable enough to make it worth the time and effort needed.	88.9%	100%
I became comfortable with videotaped observations.	88.9%	100%
I found KIPS helpful in talking to families about parenting.	87.5%	100%
I would like to continue using KIPS in my daily work.	77.8%	100%

Note. [a] N of PAT =9, N of EHS=10

None of the providers disagreed with any of the statements. Most of the ratings marked as 3) Mixed Feelings came from one county, where the supervisor was minimally engaged in the study. This has convinced us of the value of supervision for successful KIPS use in home visiting programs. The FSPs reported that their families were comfortable with the KIPS assessment process (PAT 87.4%, EHS 90.0%).

The focus groups confirmed and extended the favorable survey findings. Independent of KIPS, the opportunities to observe parent/child interaction and include the use of video in their services were strongly supported. All of the providers found the information collected by KIPS valuable. For example, an EHS FSP remarked, *"I know this tool is going to be useful in educating parents."* A PAT provider commented, *"You have these specific items on specific behaviors, so when you are writing up your visit record you can identify strengths and areas you want to work on."* The choice of free play was seen as positive. One PAT provider said, *"I like that KIPS reinforces the importance of play, and that is what PAT is all about."* KIPS provided FSPs new and valuable information. One EHS provider said**,** *"I was surprised. I saw things in the families I didn't realize. It made me change my whole lesson plan."* Many providers expressed surprise by what the KIPS scores revealed. For example, *"The ones that I thought were going to score low really surprised me. My mouth was open when I saw the scores, and this was both ways, both high and low."*

Some of the providers thought that filming 20 minutes of play might be too long, especially too long for babies, or making some of the parents uncomfortable. In contrast, other providers found that the observation went quickly, and that being an observer, rather than a participant in the interaction, was very valuable. We used 20 minutes in the study to ensure adequate sampling of behavior for KIPS scoring. In KIPS training, we advise that at the outset of the play session, the parent and child be given the option to pause or end the observation if they become uncomfortable. Continuing the observation process fails to provide valuable assessment information if the interaction becomes atypical. We recommend that FSPs work with their supervisors in determining optimal observation time for families.

In addition to using KIPS as a parenting assessment tool, the FSPs offered several other uses. There was a common desire to share ratings and videos within the program staff as a tool in case reviews. This could not be done within this study protocol because of promised confidentiality. However, the FSPs are planning it for future clinical purposes as part of their normal services. They also suggested using KIPS directly in parent education services to support strengths and reinforce caregiver improvement over time. Like other clinicians and researchers (Erickson & Kurz-Riemer, 1999; Hilligoss, 2004), the FSPs reported that caregivers were highly motivated by the videos. The EHS staff was surprised by the number of males who volunteered to participate in the study. They believe that the video stimulated male participation, and intend to explore using video to increase male participation in services. The EHS providers suggested developing a companion caregiver self-assessment tool to guide caregiver observations while viewing the video and to inform family goal planning. Based on this suggestion, we have developed a simple parent self-reflection tool based on KIPS. One provider found that KIPS scoring helped her prioritize and structure her next visit, thereby suggesting KIPS' value as a planning tool.

Discussion

KIPS was designed to provide a practical observational assessment tool for those who work with families to strengthen parenting of young children. Despite the existence of parent-child interaction research instruments and numerous calls from the field for a practical tool, no instrument has gained common use among family service programs for the purposes of guiding parenting intervention or evaluating parenting outcomes. To address this gap, KIPS was designed

to assess key facets of the quality of parenting behavior, and yet remain practical for practitioners who provide parenting education and support. Instrument development was guided by both current research and provider feedback, using three stages of refinement. We aimed to balance the collection of sufficient information regarding parenting behaviors across diverse families and service settings, with the simplicity required for routine use. KIPS consistently has shown high face validity with a broad range of providers. Furthermore, after using KIPS with the families they serve, nearly all providers in the field test agreed that the instrument provided useful information and intended to continue using the tool.

Since programs are increasingly using paraprofessionals (Eggbeer, Mann, & Gilkerson, 2003; Musick & Stott, 2000), one aim in the development of the tool was to generate an instrument appropriate for paraprofessionals to use. In the field test, we found that paraprofessionals were indistinguishable from professionals in learning to score KIPS reliably, and both were able to use the tool reliably with caregivers they serve. Based on the field test results, KIPS appears to fill the need for a practical and reliable observational parenting behavior assessment tool.

Psychometric studies have established the reliability of KIPS. Furthermore, as evidence of validity, the results showed that mean scores of KIPS were correlated significantly with those of the P/CIS, a reliable and valid observational tool, long used in research. KIPS scores were significantly lower for mothers entering substance abuse treatment, and for caregivers with few socioeconomic resources. Caregivers rated higher on KIPS had children who exhibited greater playfulness. Finally, caregivers considered more highly engaged in early intervention services demonstrated higher scores on KIPS. Our future work will study the impact of early intervention services on parenting behavior assessed with KIPS.

KIPS has three primary uses for practitioners: 1) as a clinical assessment tool that guides intervention; 2) as an aide to supervision and teamwork; and 2) as a program evaluation tool. As a clinical tool, KIPS focuses observations to assess twelve essential caregiving behaviors within the context of the child's needs. This brief, structured observational tool permits the practitioner to objectively assess the parent's or caregiver's strengths and areas for improvement on key behaviors that are modifiable. A KIPS assessment at service enrollment can establish a baseline. The resulting information can be used to individualize goals and services to help the caregiver learn how to adapt to his/her child's needs. When repeated periodically, KIPS can provide feedback on parenting progress. The KIPS assessment process can open a dialog with caregivers about alternative parenting strategies that may lead to change in daily parenting practices. KIPS also can provide a common language and approach for supervision, case review, and team planning. By discussing KIPS assessments, staff can develop shared strategies and reinforce common messages for working with each family. As a program evaluation tool, KIPS ratings offer quantitative parenting assessment data that can be aggregated to evaluate parenting outcomes and to inform program improvement.

The time and cost of training to administer an observational instrument is commonly a major barrier to the adoption of an observational tool. The field test demonstrated that we can effectively train providers to use KIPS in a single day. To reduce cost and increase convenience, we have developed a Web-based training for KIPS. Our research has shown that practitioners

learning parenting assessment over the Web are equally reliable and find the process more satisfactory compared with those learning in a classroom (Comfort, Gordon, & Kelliher, 2002). Another common barrier, maintaining scoring reliability, can also be addressed by providing Web-based support. The online support system will provide a practice video database that practitioners can access to maintain their scoring skills.

A clinically relevant, practical, reliable, and valid scale, coupled with a convenient and scalable online training and support system fills a major need for family service programs. With a practical tool to assess parenting behavior, practitioners can more effectively identify parenting strengths and needs in order to make informed interventions, track progress and evaluate program outcomes. With the ability to assess caregiver behavior, providers can more effectively tailor their services to support nurturing caregiver-child interactions, thereby improving the health, well-being, and development of young children and their families.

References

Anastasi, A. (1998). *Psychological testing* (6th ed.). New York: Macmillan.

Bailey, D. B. & Simeonsson, R. J. (1988). *Family assessment in early intervention*. Columbus, OH: Merrill.

Bavolek, S. J. & Keene, R. G. (1999). *Adult-Adolescent Parenting Inventory AAPI-2: Administration and development handbook.* Park City, UT: Family Development Resources.

Blasco, P. M., Hrncir, E., & Blasco, P. A. (1990). The contribution of maternal involvement to mastery performance in infants with cerebral palsy. *Journal of Early Intervention, 14*, 161-174.

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & Garcia Coll, C. (2001). The home environments of children in the United States: Part 1, Variations by ethnic and income group. *Child Development, 72*, 1844-1867.

Brazelton, T. B. & Greenspan, S. (2000). *The irreducible needs of children*. Cambridge, MA: Perseus.

Brooks, C. & Rice, K. (1997). *Families in recovery*. Baltimore: Brookes.

Brooks-Gunn, J., Berlin, L., & Fuligni, A. (2000). Early intervention programs: What about the family? In J. Shonkoff & S. Meisels (Eds.), *Handbook of early childhood intervention* (2nded., pp. 549-588). UK: Cambridge University Press.

Brooks-Gunn, J., & Markman, L. B. (2005). The contribution of parenting to ethnic and racial gaps in school readiness. *Future of Children, 15* (1), 139-168. Retrieved September 25, 2005, from http://www.futureofchildren.org/homepage2824/index.htm

Cabrera, N. J., Tamis-LaMonda, C. S., Bradley, R. H., Hofferth, S., & Lamb, M. E. (2000). Fatherhood in the 21st century. *Child Development, 71* (1), 127-136.

Chiarello, L. Huntington, A., & Bundy, A. (in press). A comparison of motor behaviors, interaction, and playfulness during mother-child and father-child play with children with motor delay. *Physical and Occupational Therapy in Pediatrics*.

Child Trends (2002). Charting parenthood: A statistical portrait of fathers and mothers in America. Retrieved November 26, 2003, from http://www.childtrends.org/Files/ParenthoodRpt2002.pdf

Civitas, Zero to Three, & Brio Corporation (2000). *What grown-ups understand about child development: A national benchmark survey*. Chicago: Civitas.

Collins, W. A., Maccoby, E. E., Steinberg, L., Hetherington, M. E., & Bornstein, M. H. (2000). Contemporary research on parenting: The case for nature and nurture. *American Psychologist, 55* (2), 218-232.

Comfort, M. (2001, March). *A new user-friendly assessment to guide parenting intervention*. Workshop presented at Delaware Valley Early Childhood Conference, Philadelphia, PA.

Comfort, M. & Farran, D. (1994). Parent-child interaction assessment in family-centered intervention. *Infants and Young Children, 6* (4), 33-45.

Comfort, M., Gordon, P. R., & Kelliher, J. (2002, November). *Broadband model for online staff development: Interactive Parenting Assessment.* Paper presented at the 130th Annual Meeting of American Public Health Association, Philadelphia [Abstract #50404]. Retrieved September 22, 2005, from http://apha.confex.com/apha/130am/techprogram/paper_50404.htm

Comfort, M., Jones, C. W. & Unger, D. G. (2000, June). *Assessment of parent-child play: Refining the P/CIS for practitioners*. Poster session presented at the Fifth Annual National Head Start Research Conference, Washington, D.C.

Commonwealth Fund. (1996). *Survey of parents of children: Princeton Survey Research Associates*. Ann Arbor, MI: DataStat.

Crockenberg, S., & Leerkes, E. (2000). Infant social and emotional development in family context. In C.H. Zeenah, Jr. (Ed.), *Handbook of infant mental health* (2nd ed., pp. 60-90). New York: Guilford Press.

Daro, D. (2005). Response to Chaffin 2004. *Child Abuse & Neglect, 29*, 237-240.

Diaz, J., Oshana, D., & Harding, K. (2004). *Healthy Families America: 2003 Annual profile of program sites*. Chicago: National Center on Child Abuse Prevention Research, Prevent Child Abuse America.

Dixon, S., & Stadtler, A. (2002). Age specific observations of parent-child interaction. In Jellinek, M., Patel, B., & Froehle, M. (Eds.), *Bright futures in practice: Mental health Vol II. tool kit* (pp. 24-25). Arlington, VA: National Center for Education in Maternal & Child Health.

Eggbeer, L., Mann, T., & Gilkerson, L. (2003). Preparing infant-family practitioners: A work in progress. *Zero to Three, 24*(1), 35-40.

Elliot, L. K., & Flanagan, K. (1999). *Growing great kids: Healthy relationships, healthy development*. San Angelo, TX: Great Kids.

Erickson, M. R., & Kurz-Riemer, K. (1999). *Infants, toddlers, and families: A framework for support and intervention*. New York: Guildford.

Ewing Marion Kaufman Foundation (2002). *Set for success: Building a strong foundation for school readiness based on the social-emotional development of young children***.** Kaufman Foundation Early Education Exchange. Retrieved May 1, 2004, from http://www.emkf.org/pdf/eex_summary.pdf

Fagan, J. (1996). A preliminary study of low-income African American fathers' play interactions with their preschool-age children. *Journal of Black Psychology, 22*(1), 7-19.

Fagan, J. (2000). African American and Puerto Rican American parenting styles, paternal involvement, and Head Start children's social competence. *Merrill-Palmer Quarterly, 46*, 592-612.

Family Support America (2005). *Principles of Family Support Practice*. Retrieved August 21, 2005, from http://www.familysupportamerica.org/content/learning_dir/principles.htm

Fantuzzo, J., Tighe, E., McWayne, C., Davis, G., & Childs, S. (2002). Parent involvement in early childhood education and children's peer-play competencies: An examination of multivariate relationships. *NHSA Dialog, 6* (1), 3-21.

Farran, D., Clark, K. & Ray, A. (1990). Measures of parent-child interaction. In E. Gibbs & D. Teti (Eds.), *Interdisciplinary assessment of infants* (pp. 227-247). Baltimore: Brookes.

Farran, D., Kasari, C., Comfort, M., & Jay, S. (1986). *Parent/Caregiver Involvement Scale*. Unpublished assessment scale available from dale.farran@vanderbilt.edu.

Farran, D., Kasari, C., Yoder, P., Harber, L., Huntington, G., & Comfort-Smith, M. (1987). Rating mother-child interactions in handicapped and at-risk infants. In T. Tamir (Ed.), *Stimulation and intervention in infant development* (pp. 297-312). London: Freund.

Field, T. (2003). *Touch*. Cambridge, MA: MIT Press.

Greenspan, S., & Shanker, S. G. (2004). *The first idea: How symbols, language, and intelligence evolved from our primate ancestors to modern humans*. Cambridge, MA: Perseus.

Guralnick, M. (1998). Effectiveness of early intervention. *Journal of Mental Retardation, 102*, 319-345.

Halpern, R. (2000). Early childhood intervention for low-income children and families. In J. Shonkoff & S. Meisels (Ed.), *Handbook of early childhood intervention* (2nded., 361-386). UK: Cambridge University Press.

Halpern, R. (2004). Parent support and education: Past history, future prospects. *Applied Research in Child Development, 6*, 1-12.

Hawkins, J. D., Catalano, R. F., Kosterman, R., Abbott, R., & Hill, K. G. (1999). Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Archives of Pediatric Adolescent Medicine, 153*, 226-234.

Hayden, L., Schiller, M., Dickstein, S., Seifer, R., Sameroff, A., Miller, I., Keitner, G., & Rasmussen, S. (1998). Levels of family assessment: I. Family, marital, and parent-child interaction. *Journal of Family Psychology, 12* (1), 7-22.

Helm, J. M., Comfort, M., Bailey, D. B., & Simeonsson, R. J. (1990). Adolescent and adult mothers of handicapped children: Maternal involvement in play. *Family Relations, 39*, 432-437.

Hilligoss, E. (2004). Research in real time. *Applied Research in Child Development, 6*, 13-14.

Hirsch-Pasek, K., & Golinkoff, R. (2003). *Einstein never used flash cards*. Emmaus, PA: Rodale.

Jones, C. W., & Unger, D. G. (2000). Diverse adaptations of single-parent low-income families with young children: Implications for community-based prevention and intervention. *Journal of Prevention and Intervention in the Community, 20*, 5-23.

Kelly, J., & Barnard, K. (2000). Assessment of parent-child interaction: Implications for early intervention. In J. Shonkoff & S. Meisels (Eds.), *Handbook of early childhood intervention* (2nded., pp. 258-289). UK: Cambridge University Press.

Krauss, M.W. (2000). Family assessment within early intervention programs. In J. Shonkoff, & S. Meisels (Ed.), *Handbook of early childhood intervention* (2nded., pp.290-308). UK: Cambridge University Press.

Kumpfer, K., & Alvarado, R. (2003). Family-strengthening approaches for the prevention of youth problem behaviors. *American Psychologist, 58* (6/7), 457-465.

Lamb, M. E. (2004). *The role of the father in child development*. Hoboken, NJ: Wiley.

Love, J. M., Kiskar, E. E., Ross, C. M., Schochet, P. Z., Brooks-Gunn, J., Paulsell, D., Boller, K., Constantine, J., Vogel, C., Fuligni, A. S., & Brady-Smith, C. (2002). *Making a difference in the lives of infants and toddlers and their families: The impact of Early Head Start*. Retrieved July 12, 2003, from http://www.mathematica-mpr.com/PDFs/ehsfinalsumm.pdf

Lovejoy, M. C., Weis, R., O'Hare, E., & Rubin, E. C. (1999). Development and initial validation of the Parent Behavior Inventory. *Psychological Assessment, 11*, 534-545.

Mahoney, G., Spiker, D., & Boyce, G. (1996). Clinical assessments of parent-child interaction: Are professionals ready to implement this practice? *Topics in Early Childhood Special Education, 16* (1), 26-50.

McGrath, M. M., Sullivan, M. C., & Seifer, R. (1998). Maternal interaction patterns and preschool competence in high-risk children. *Nursing Research, 47*(6), 309-317.

McLoyd, V. C., Hill, N. E., & Dodge, K. A. (Eds.). (2005). *African American family life: Ecological and cultural diversity*. New York: Guildford.

McWilliam, P. J., & Bailey, D. B. (1993). *Working together with children and families*. Baltimore: Brookes.

Munson, L. J., & Odom, S. L. (1996). Review of rating scales that measure parent-infant interaction. *Topics in Early Childhood Special Education, 16* (1), 1-25.

Musick, J., & Stott, F. (2000). Paraprofessionals revisited and reconsidered. In J. Shonkoff & S. Meisels (Ed.), *Handbook of early childhood intervention* (2nd ed., pp.439-453). UK: Cambridge University Press.

NICHD Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at 24 and 36 months. *Child Development, 69* (4):1145-1170.

Okimoto, A., Bundy, A., & Hanzlik, J. (1999). Playfulness in children with and without disability: Measurement and intervention. *American Journal of Occupational Therapy, 54* (1), 73-82.

Ounce of Prevention Fund (2003). Ready for school: Case for including babies & toddlers as we expand preschool opportunities. Retrieved December 27, 2004, from http://www.ounceofprevention.org/downloads/publications/ready_for_school.pdf

Parents as Teachers National Center (2004). *2002-03 Parents As Teachers annual program report summary*. St. Louis, MO: Author.

Parks, P. L. & Smeriglio, V. L. (1986). Relationships among parenting knowledge, quality of stimulation in the home and infant development. *Family Relations, 35*, 411-416.

Perez, E. M., Hendricks, M. K., Beard, J. L., Murray-Kolb, L. E., Berg, A., Tomlinson, M., Irlam J., Isaacs W., Njengele, T., Sive, A., & Vernon-Feagans, L. (2005). Mother-infant interactions and infant development are altered by maternal iron deficiency anemia. *Journal of Nutrition, 135* (4), 850-855.

Pleck, J. H., & Masciadrelli, B. P. (2004). Paternal involvement by U.S. residential fathers: Levels, sources and consequences. In M.E. Lamb (Ed.), *The role of the father in child development* (4th ed., pp. 222-271). Hoboken, NJ: Wiley.

Sameroff, A., & MacKenzie, M. (2003). Quarter-century of transactional model. *Journal of Zero to Three, 24*(1), 14-22.

Shacklee, H., & Demarest, D. (2003). *Survey of Parenting Practice tool kit*. Boise, ID: University of Idaho Extension.

Shonkoff, J., & Meisels, S. (Eds.) (2000). Handbook of early childhood intervention (2nd ed.). UK: Cambridge University Press.

Shonkoff, J.P., & Phillips, D. (2000). *From neurons to neighborhoods*. Washington, DC: National Academy Press.

Shore, R. (2002). *What kids need: Today's best ideas for nurturing, teaching, and protecting young children*. Boston: Beacon.

Simeonsson, R., Bailey, D., Huntington, G., & Comfort, M. (1986). Testing the concept of goodness of fit in early intervention. *Infant Mental Health Journal, 7*(1), 81-94.

Sockloff, A. L. (1975). Behavior of the product-moment correlation coefficient when two heterogeneous subgroups are pooled. *Educational and Psychological Measurement, 34*, 267-276.

SPSS® (1998). *SPSS base 8.0 for Windows® user's guide*. Chicago: Author.

Strom, R. D. (1995). *Parent As A Teacher Inventory manual*. Bensenville, IL: Scholastic Testing Service.

Teti, D., & Gelfand, D. (1991). Behavioral competence among mothers of infants: The mediational role of maternal self-efficacy. *Child Development, 62*, 918-929.

Unger, D. G., Brown, M., & Park, E. (2003). Parenting and early childhood. In T. P. Gullotta & M. Bloom (Eds.), *Encyclopedia of primary prevention and health promotion* (pp.774-780). New York: Kluwer Academic.

Unger, D. G., Tressell, P. A., Jones, C. W., & Park, E. (2004). Involvement of low-income single caregivers in child-focused early intervention services: Implications for caregiver-child interaction. *Family Relations, 53* (2), 210-218.

U.S. Department of Health and Human Services. (2004). *Head Start program fact sheet*. Administration for Children & Families. Retrieved June 21, 2005, from http://www.acf.hhs.gov/programs/hsb/research/2004.htm

Wakschlag, L.S. & Hans, S.L. (2000). Early parenthood in context: Implications for development and intervention. In C.H. Zeenah, Jr. (Ed.), *Handbook of infant mental health* (2nd ed., pp. 129-144). New York: Guildford.

Weiss, H. B., Kreider, H., Lopez, M. E., & Chatman, C. E. (Eds.). (2005). *Preparing educators to involve families: From theory to practice*. Thousand Oaks, CA: Sage.

Werner, E. (2000). The power of protective factors in the early years. *Journal of Zero to Three, 20*, 3-5.

Werner, E., & Smith, R. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, New York: Cornell University Press.

Women's & Children's Health Policy Center. (2001). *Healthy Steps national evaluation report: Phase 3, year 4*. Baltimore: Johns Hopkins School of Public Health.

Zeanah, C. H. Jr. (Ed.). (2000). *Handbook of infant mental health* (2nd ed.). New York: Guilford.

Zero to Three: National Center for Infants, Toddlers, and Families. (1994). *Diagnostic classification: 0-3: Diagnostic classification of mental health and developmental disorders of infancy and early childhood*. Washington, DC: Author.

Zigler, E., & Muenchow, S (1992). *Head Start: Inside story of successful educational experiment*. New York: Basic Books.

Acknowledgments

The authors extend deep appreciation to C. Wayne Jones of Bala Child & Family Associates and Donald G. Unger of the University of Delaware for sharing parent-child interaction data and insightful comments on the KIPS prototypes. We are especially grateful to Dr. Alan Sockloff of Temple University for psychometric and statistical advice. Thanks also to Jay Fagan of Temple University for sharing paternal and child data, and to Elizabeth Jaeger of Saint Joseph's University for collaborating on parent-child data collection with the able assistance of her psychology students. We are especially grateful for the enthusiasm of the Staff members at Early Head Start/Health Federation of Philadelphia and Parents As Teachers-Delaware in conducting the KIPS field test that was supported by the National Institute of Child Health and Human Development Grant 1R43HD048135-01A1. The views expressed here do not necessarily represent the views of NICHD. Finally, special thanks to all of the families who generously shared their playtime with us on video to support KIPS development and training efforts.