
**THE EARLY PROMOTION AND INTERVENTION
RESEARCH CONSORTIUM (E-PIRC): FIVE
APPROACHES TO IMPROVING INFANT/TODDLER
MENTAL HEALTH IN EARLY HEAD START**

LINDA S. BEEBER

University of North Carolina at Chapel Hill

RACHEL CHAZAN-COHEN

U.S. Department of Health and Human Services

JANE SQUIRES

University of Oregon

BRENDA JONES HARDEN

University of Maryland

NEIL W. BORIS AND SHERRYL S. HELLER

Tulane University

NEENA M. MALIK

University of Miami

ABSTRACT: One planned consequence of the national Infant Mental Health Forum held in the United States in 2000 was the funding of five research projects conducted in Early Head Start (EHS) programs. Each project strengthened existing programs by integrating infant/toddler mental health approaches and testing the outcomes on infant/toddler development, behavior, and parent-child interactions. In two of the projects, the effect of offering enrichment for EHS staff was tested. The other three projects tested the effect of services offered directly to parents and children. This article describes the five projects and the theories, methods, and outcome measures used. In order to understand more fully the elevated risk factors in these families and the consequences for mental health in their infants and toddlers, a common set of measures was developed. Data have been used to explore the common threats to mental health and the factors that moderate the impact on infants and toddlers.

RESUMEN: Una de las planeadas consecuencias de un foro nacional sobre la salud mental infantil

The consortium studies were funded under a DHHS/Administration for Children and Families/ACYF Early Head Start-University Partnership Grant initiative.

Direct correspondence to: Linda S. Beeber, PhD, RN, The University of North Carolina at Chapel Hill. School of Nursing CB # 7460, Chapel Hill, North Carolina 27599-7460; telephone: (919) 843-2386; fax: (919) 966-0984; e-mail: beeber@email.unc.edu

INFANT MENTAL HEALTH JOURNAL, Vol. 28(2), 130-150 (2007)
© 2007 Michigan Association for Infant Mental Health This article is a U.S. government work and, as such, is in the public domain in the United States of America. Published online in Wiley InterScience (www.interscience.wiley.com).
DOI: 10.1002/imhj.20126



llevado a cabo en los Estados Unidos en el año 2000, fue financiar cinco proyectos de investigación en programas de Comienzo Temprano (EHS). Cada proyecto fortalecía programas existentes al integrar acercamientos de la salud mental de niños e infantes y examinar los resultados en el desarrollo de los niños e infantes, su conducta y sus interacciones con los padres. En dos de los proyectos, se examinó el efecto de ofrecer enriquecimiento al personal de EHS. Los otros tres proyectos examinaron el efecto de los servicios ofrecidos directamente a padres y niños. Este artículo describe los cinco proyectos y las teorías, métodos y medidas de resultado que se usaron. Para comprender mejor los elevados factores de riesgo en estas familias, y las consecuencias para la salud mental en sus niños e infantes, se estableció un número común de medidas. La información ha sido usada para explorar las comunes amenazas a la salud mental y los factores que moderan el impacto en los niños e infantes.

RÉSUMÉ: Une des conséquences planifiées du forum national sur la santé mentale du nourrisson qui s'est tenu aux Etats-Unis en 2000 fut le financement de cinq projets de recherches mené à bien dans des programmes de Early Head Start (programme américain d'aide aux familles à faibles revenus, abrégé EHS). Chaque projet a renforcé les programmes existants en intégrant des approches en santé mentale du nourrisson/petit enfant et en testant les résultats sur le développement et le comportement du nourrisson/petit enfant, et les interactions parent-enfant. Dans deux des projets l'effet d'offrir des activités d'enrichissement aux employés EHS a été testé. Les trois autres projets ont testé l'effet de services offerts directement aux parents et aux enfants. Cet article décrit ces cinq projets et les théories, méthodes et mesures de résultat utilisées. De façon à mieux comprendre les facteurs de risque élevés chez ces familles et les conséquences pour la santé mentale de leurs nourrissons et petits enfants, une série de mesures en commun a été développée. Les données ont été utilisées pour explorer les dangers communs pour la santé mentale et les facteurs qui modèrent l'impact sur les nourrissons et les jeunes enfants.

ZUSAMMENFASSUNG: Eine der geplanten Konsequenzen des nationalen Forums zur seelischen Gesundheit von Kleinkindern, das im Jahr 2000 in den USA abgehalten wurde, war die Bezahlung von fünf Forschungsprojekten, die das Frühförderungsprogramm untersuchten. Jedes Projekt verstärkte bestehende Programme, indem Zugänge aus dem Bereich der seelischen Gesundheit für Kleinkinder hinzugefügt und die Ergebnisse im Bereich der Entwicklung der Kleinkinder, deren Verhalten und die Eltern-Kind Interaktion untersucht wurden. Bei zwei Projekten wurde der Effekt gemessen, der durch das Angebot an Fortbildung für die Mitarbeiter des EHS entstand. Die anderen drei Projekte testeten die Effekte der Angebote, die den Eltern und Kindern direkt gemacht wurden. Dieser Artikel beschreibt die fünf Projekte und deren Theorien, Methoden und die Ergebnismessungen. Um gänzlich die erhöhten Risikofaktoren bei diesen Familien und deren Auswirkungen auf die seelische Gesundheit der Kleinkinder zu verstehen, wurde ein gemeinsamer Satz an Messinstrumenten entwickelt. Die Daten wurden verwandt, um die gemeinsamen Gefährdungen der seelischen Gesundheit zu erforschen und die Faktoren, die deren Auswirkungen auf Kleinkinder beeinflussen.

抄録：2000年に米国で開催された全国乳幼児精神保健フォーラムの計画された成果の一つは、早期ヘッド・スタート・プログラム(EHS)の中で実施された5つの研究的プロジェクトに資金援助を行ったことだった。それぞれのプロジェクトは、乳幼児の精神保健アプローチを統合すること、そして乳幼児の発達、行動、および親子の相互交流における結果をテストすることによって、既存のプログラムを強化した。これらのプロジェクトのうち二つでは、EHS スタッフに価値を高めるものを提供する効果が、テストされた。他の三つのプロジェクトは、親と子どもに直接提供されたサービスの効果が、テストされた。この論文では、5つのプロジェクトと、そこで使用された理論、方法および結果の測定法を記述する。これらの家族の中で高められている危険因子と、彼ら

の乳幼児に対する精神保健上の影響について、より十分に理解するために、共通の測定セットが開発された。データは、精神保健に対する共通の脅威と、乳幼児への影響を和らげる要因を探索するために、使われてきた。

* * *

At the Infant Mental Health Forum, the national meeting that was the kick-off for the Early Head Start Infant Mental Health Initiative, Charles Zeanah offered a definition of infant mental health: “Infant mental health may be defined as the state of emotional and social competence in young children who are developing appropriately within the interrelated contexts of biology, relationship, and culture. This definition emphasizes the infant as imbedded both within multiple contexts and as developing and changing. Normal developmental trajectories for various domains serve as reference points for assessing infant competence. Threats to infant mental health are created by intrinsic or extrinsic factors that increase the risk of suffering, developmental deviance, or maladaptation.” As described earlier in this volume, an outcome of the forum was the support of research initiatives. Following the October 2000 Infant Mental Health Forum, the Administration on Children, Youth, and Families (ACYF) and the Head Start Bureau engaged in both programmatic and research activities to support innovative practice in supporting infant and family mental health. The research activities were aimed at generating new models for supporting mental health of families specifically for use in Early Head Start programs, although they might have been developed for other populations. A request for proposals was issued that called for the formation of partnerships between university-based researchers and Early Head Start programs to develop and test prevention, promotion, and intervention protocols to improve infant and toddler mental health. The proposals were also expected to describe services offered through the intervention (implementation), as well as factors influencing whether some families responded better to the interventions (moderators) and to explore why the intervention worked (mediators). Five research teams were funded through this initiative and became the Early Promotion & Intervention Research Consortium (E-PIRC). This paper describes the five projects in the Consortium and the development of a shared database. All of the approaches are rooted in the rich theoretical framework of infant mental health (see Weatherston and Zeanah, this volume, for a fuller discussion of the history of this work).

Following this perspective, the five approaches toward interventions focused on context—relational, family, community, and cultural—both in understanding infant behavior and in designing intervention services. All of the approaches intervened at the level of relationships: some directly on the parent-child relationship, some on the parent-EHS staff relationship, and some on staff-staff relationships. The interventions were also designed to be sensitive to the culture and context in which families live. While the goals of the interventions were to optimize the functioning of the child, parent, and dyad, the imperative was to prevent or alleviate threats to mental health in the child.

Early Head Start is a natural place to embed an infant mental health intervention. The population served by Early Head Start has a high rate of identified mental health concerns as well as demographic risk factors (Administration for Children and Families [ACF], 2002) putting children at risk of poor social emotional outcomes. Both Early Head Start and the infant mental health perspective shared a focus on the family and the caregiving environment

and that the infant must be seen in the context of the family and community. The perspectives also shared a belief in the power of trusted relationships between program staff and families as the sustaining bridge by which families could access mental health intervention without feeling threatened, stigmatized or mystified. While the five approaches described in this paper shared these commonalities, they took different forms due to the needs of their target populations as well as resources and characteristics of programs. While not exhaustive, the projects can be seen as the types of enhancements that can be undertaken by EHS programs. In the future, the Consortium will present empirical evidence on implementation and effectiveness of the interventions.

Through the common purpose of integrating infant and toddler mental health approaches into existing Early Head Start programs, each project had a program capacity-building dimension that fostered the staff competencies and supportive organizational systems required to embed mental health into regular programming. All of the projects targeted the programs, families and parents in which known risks to infant/toddler mental health were present and yet, addressed these risks in different ways. Two of the projects (Squires and Jones Harden) worked primarily on training and supporting program staff, two of the projects (Beeber and Malik) provided manualized treatments to individual program participants, and one project (Boris and Heller) provided manualized treatments in a group format to program participants. The projects also served very different populations—teens, new-immigrant Spanish-speakers, homeless families, and those living in urban and rural settings. Table 1 presents an overview of the five projects.

The scientific design of each project necessitated a limited set of variables. In the initial sharing of the projects, the E-PIRC project officer and the investigators recognized the magnitude and complexity of the challenges to these children's mental health. In order to explore the larger picture, the group decided to add a common set of instruments to each study and pool the data across the studies, potentially allowing an examination of a more comprehensive picture of risks and strengths. This common database will be described later in this paper. The projects naturally fell into two groups—projects that approached infant/toddler mental health by intervening at the staff and program level and projects that provided direct intervention to parents.

PROJECTS THAT TRAINED AND SUPPORTED EHS STAFF TO PROMOTE INFANT AND TODDLER MENTAL HEALTH

Two of the projects helped EHS staff promote the mental health of infants and toddlers through enrichment of individual staff skills and program enhancement. These approaches emphasized the introduction of reflective supervision and the embedding of a project consultant in the programs.

***Project 1: Promoting Mental Health Through an On-Site Mentor for EHS Staff
Early Head Start-University of Oregon Partnership Project:
Improving Mental Health in Children Served by Early Head Start
Jane Squires, Ph.D., Principal Investigator***

Goals, setting, and design of the project. The University of Oregon Early Intervention Program, in partnership with the Southern Oregon Early Head Start Program, Mid-Columbia Children's Center, and Mt. Hood Community College Early Head Start implemented and

TABLE 1. Consortium Projects, Populations, and Outcomes

Project	Target	Intervention & Program Enrichment	Family Characteristics & Risks	Mechanism of Change	Major Outcomes
EHS-University of Oregon	EHS Staff	On-site mentor providing reflective supervision, observation & review of videotaped home visits of direct field staff	Predominately White, some Mexican/Hispanic & Mixed; rural-suburban; regional economic destabilization	Enhanced caregiver-child interactions	Infant toddler social-emotional competence
EHS-University of Maryland	EHS Staff	Staff training & ongoing reflective supervision in promoting healthy parent-infant/toddler interactions	African American; urban: exposure to poverty and family violence	Increased staff capacity to provide infant/toddler mental health services	Infant/toddler social-emotional competence
EHS-University of North Carolina	EHS Spanish-speaking, newly acculturating mothers with depressive symptoms	In-home, modified Interpersonal Therapy (IPT) delivered by nurse-EHS staff team (bilingual staff trained to interpret)	Latino primarily Mexican; rural-suburban; destabilizing pressures of immigration & rapid acculturation	Stronger maternal self-efficacy	Reduction of maternal depressive symptoms, improved mother-child interactions; improved child social-emotional competence
EHS-Tulane University	EHS adolescent mothers	Group parenting intervention (Circle of Security versus teacher-led Nurturing-Parent Curriculum)	African American adolescent mothers; urban-suburban	Stronger parenting capacity	Parental sensitivity to infant cues for attachment/exploration
EHS-University of Miami	EHS parents & at-risk infant/toddlers	Specialized assessment of high-risk families identified by EHS staff followed by parent-infant/toddler psychotherapy	African American, Haitian, Caribbean, Hispanic/Latino; urban; exposure to family & neighborhood violence; pressures of rapid acculturation	Emotionally attuned parent-child relationship	Stronger parent-child attachment

evaluated a preventative mental health intervention program. The Infant Mental Health Mentor Project focused on enhancing developmental growth and social-emotional competence in children served by Early Head Start (EHS). Enhanced caregiver-child relationships including increased parent sensitivity and responsiveness were targeted, as well as the knowledge and skills of Early Head Start home visitors regarding infant mental health issues and practices.

In Phase 1, a theoretically based intervention added on to a typical Early Head Start home-visiting model was compared with a nontreatment comparison group, matched by several variables including size, population, and types of families served. The mental health intervention included a mental health mentor/supervisor who provided training and support to EHS staff, and focused on infant mental health and parent-child interactions. Home visitors also followed a published social-emotional curriculum, the Creative Curriculum for Infants and Toddlers (Dombro, Colker, & Dodge, 2002). Phase 2 of the project served as a replication in which the original comparison group, Mid-Columbia Children's Center, received the mentor intervention. Phase 3 included a second replication at Mt. Hood Community College Early Head Start (Phase 2 comparison site). The research approach combined correlational, descriptive, experimental, and case-study methodologies.

The Mental Health Mentor Model was based on three premises: (1) early experience is important for optimal development; (2) children's development is affected by protective and risk factors in the environment; and (3) early preventative and compensatory intervention is effective and far less costly than later interventions (Walker, Stiller, Severson, Feil, & Golly, 1998). Goldberg's (1977) theoretical construct related to mutual competence and the development of increasingly effective communication in the interactions between parent and infant undergirded the theoretical framework. According to Goldberg, mutual competence is developed through contingent responsiveness on the part of the parent that, in turn, fosters secure attachment in the infant. Competence and a sense of self as effective result from successful interactions on the part of both parent and infant (Waters & Sroufe, 1983).

The infant mental health mentor used the following procedures: (1) reflective supervision, (2) parent-child observations guided by a formal procedure, and (3) videotaping of home visits. Mentors also provided "shadowing" on home visits, and assistance with mental health community referrals. Each of these procedures was used by the mentor to assist the EHS staff in developing intervention techniques that helped parents support and improve their children's developmental growth and social-emotional competence. The primary focus was on the dyadic parent-child relationship. Additional community health consultation time was available for mentors and home visitors to assist families needing additional mental health services.

Monthly videotapes of home visits with Early Head Start families were reviewed by the mental health mentor and home visitor in order to discuss parent-child interactions and home-visitor concerns, as well as to prepare the home visitor for reviewing the videotapes with families. Families were also given a copy of the videotapes to keep and compile as a childhood video album.

One hundred forty-three parent-child dyads ultimately participated over the 4-year project. Families who participated in the study were approximately 50% White (experimental =52%, control-comparison=54%). Mothers were the main caregivers and had an average of 11 years of education at both intervention and comparison sites, with a monthly household income of approximately \$1,000. Ethnicity of children was 45% White, with 39% Mexican and Hispanic, and 16% mixed ethnicity.

In addition to E-PIRC common measures, project-specific outcome measures included

child developmental outcomes, measured using Ages & Stages Questionnaires (ASQ) (Bricker & Squires, 1999); parent responsiveness and parent-child reciprocity, using the Infant-Caregiver Interaction Scale (ICIS) (Munson & Odom, 1996); and the quality of home visits, measured by the Home Visiting Scale (Twombly, Waddell, & Harrison, 2003). Pre- and post-comparisons were analyzed for intervention and comparison sites on the effects of the mental health mentor model to improve parent-child outcomes, including the quality of parent-child interactions as measured by the ICIS using videotaped home visit segments, and child social-emotional competence, as measured by the ASQ:SE (Squires, Bricker, & Twombly, 2002), ITSEA (Carter & Briggs-Gowan, 2000), and CBCL (Achenbach & Rescorla, 2000) subscales. In addition, home-visitor competence with young children and families served by Early Head Start was measured using the Home Visiting Scale (Twombly et al., 2003) and Service Provider Questionnaire (Squires & Twombly, 2003). Finally, qualitative interviews were conducted with caregivers, program administrators, and home visitors related to participation in the Infant Mental Health Mentor Project.

Project 2: Reduction of Mental Health Risks through Program Guidance and Staff Professional Development

Early Head Start-University of Maryland Partnership

United Planning Organization and the University of Maryland Early Head Start-University Partnership (PROJECT HAPPI)

Brenda Jones Harden, PhD, Principal Investigator

Goals, setting, and design of the project. In *A Commitment to Supporting the Mental Health of Our Youngest Children* (ACYF, 2000), the Head Start Bureau delineated potential action steps for addressing infant mental health issues in EHS programs, such as program guidance, professional development, reflective supervision, demonstration efforts, and research and evaluation regarding infant mental health. Each of these themes was incorporated in the Healthy Attachment Promotion for Parents and Infants Project (i.e., Project HAPPI). Project HAPPI, a partnership between the University of Maryland and the United Planning Organization (UPO), implemented and evaluated an infant mental health intervention within Early Head Start (EHS) programs in Washington, DC.

The overarching goal of Project HAPPI was to train and support EHS staff to integrate infant mental health service delivery into their ongoing work. Specifically, staff conducted parent-infant interaction sessions with high-risk families that were expected to promote healthy parent-infant relationships, and ultimately to enhance the social-emotional competence of EHS children. The clinical and empirical literatures have highlighted the import of early relationship interventions to address potential attachment and other relationship difficulties with parents and infants (see Berlin, Brady-Smith, & Brooks-Gunn, 2004).

To be eligible to receive the intervention, families had to be experiencing at least one of three psychological risk factors: (1) maternal depression; (2) maternal substance use; and (3) child maltreatment; and/or a demographic risk factor (e.g., multiple children under 5; adolescent parenthood). Poverty, which the overwhelming majority of Head Start families experience, places families at high risk for each of these factors (see Aber, Jones, & Cohen, 2000). Empirical evidence points to the deleterious developmental and mental health consequences for children of being reared in environments in which these major psychosocial risk factors exist (Lester, Boukydis, & Twomey, 2000; Zeanah, Boris, & Larrieu, 1997).

The aim of Project HAPPI was to build the capacity of EHS programs to deliver infant mental health services. Scholars and practitioners alike have posited that training and support

of program staff are important strategies for addressing the paucity of mental health service providers available to and appropriate for community-based early intervention programs (see Musick & Stott, 2000). In this project, family service staff persons, who generally were responsible for enrollment and case management, conducted parent-infant interaction sessions with families who were enrolled in EHS center-based option. Additionally, home-based staff provided parent-infant sessions to specific families receiving home visits through the home-based option.

Project HAPPI trained and supported EHS staff to provide biweekly sessions of approximately 1 hour's duration to eligible families. As the number of visits has been found to make a difference regarding program effectiveness, a goal of 26 home visits was established. EHS staff received a manual that provided them with infant mental health topics to cover for each of the 26 visits, as well as interactional activities that could be used to address these topics. The primary focus of each session was the promotion of the parent-infant relationship and the infant's social-emotional competence, via a parent-infant interaction experience. This could be accomplished through a dyadic play session, a natural, interactive routine (e.g., feeding, dressing, hair combing, diapering), or simply an experience of affective sharing or nonverbal/verbal communication between the parents and infants. During these sessions, EHS staff facilitated interaction, provided information to parents regarding social-emotional development of young children, and offered emotional support to parents.

The clinical intervention provided by Project HAPPI to these EHS programs took the form of training, supervision, and consultation. A doctoral-level interventionist with expertise in parent-infant interaction provided the ongoing training, supervision, and consultation to EHS direct service staff. Additionally, the project director assisted with the training and provided ongoing consultation to EHS management staff. Initially, home-based and family support staff participated in a 9-day intensive training around infant mental health principles, parent-child interaction intervention, parental mental health, and infant social-emotional development and assessment. Subsequent 1-day training sessions were held on a semiannual basis. Because training can only introduce staff to these important concepts and skills, each staff person participated in weekly small-group or individual supervision in order to assist them to integrate an infant mental health approach into their practice. These supervision sessions provided "booster" training on key concepts, and extended the formal training by focusing on more sophisticated concepts (e.g., impact of maternal depression on infant).

Most importantly, the supervision sessions allowed staff to reflect on their work with families. This was primarily accomplished through reviewing videotapes that were taken of staff conducting home visits with target families. They assessed themselves regarding strengths and areas for enhancement, with a particular focus on how they created and responded to parent-infant interactions. Supervisory sessions were also used as case conferences, in which they discussed and attempted to develop strategies for very difficult cases. Finally, these sessions represented opportunities for peer support, for validation of the very difficult work in which staff was engaged, and for nurturance of the staff given the many stressors that they experienced in their own lives (e.g., financial, educational, parenting, health).

Consultation to staff was provided regularly through these supervisory sessions but occurred through many other venues as well. Project HAPPI staff participated in monthly EHS management meetings and ensured that infant mental health services were incorporated in overall program planning. Additionally, EHS management staff received consultation on the

use of reflective supervision, and infant social-emotional assessment. When psychological crises affected programs (e.g., death of staff), mental health consultation was provided to individual staff as well as groups if needed.

Research design and methods. To evaluate this project, process (i.e., program implementation) and outcome (program impact) variables were examined utilizing multiple data collection methods. Given this project's major goal of documenting whether EHS staff could deliver infant mental health services, staff functioning (i.e., social-emotional competence, health, and mental health) and the content (i.e., amount of parent-infant interaction) and quality (i.e., facilitation of parent-infant interaction, emotional support of parent) of their intervention sessions with families were examined. Additionally, process data were collected on intervention fidelity and dosage, as well as programmatic changes that were made as a result of the partnership.

Regarding outcome evaluation, the project employed a quasi-experimental, pretest-posttest design. The functioning of three groups of parent-child dyads were examined at baseline and postintervention (9–12 months after baseline): (1) those receiving traditional center-based Early Head Start services plus the infant mental health intervention; (2) those receiving traditional center-based Early Head Start services only; and (3) those receiving enhanced home-based services. In addition to the E-PIRC common constructs, we examined infant development, parental attitudes, parental disciplinary practices, parent-infant interaction, and the home environment.

PROJECTS THAT DIRECTLY INTERVENED WITH PARENTS, INFANTS AND TODDLERS

The remaining three projects tested intervention protocols that brought services directly to EHS families in the form of assessment and therapy with either the parents or the parents and the child. Two of the projects used a randomized treatment-control design.

Project 3: In-Home Nurse-Interpreter Team Intervention for Monolingual Spanish-speaking Latina Mothers with Depressive Symptoms

Early Head Start-University of North Carolina at Chapel Hill School of Nursing Partnership

EHS Latina Mothers: Reducing Depressive Symptoms and Improving Infant/Toddler Mental Health (ALAS [Wings] Project)

Linda S. Beeber, PhD, RN, Principal Investigator

Goals, setting, and design of the project. Depressive symptoms in mothers may endanger the mental health of their infant or toddler. These symptoms can reduce attentiveness, affectionate touch, child-centered conversation, spontaneous play, and developmental support (Hall, 1990; Harnish, Dodge, & Valente, 1995; Klimes-Dougan et al., 1999; Lyon-Ruth, Connell, & Grunnebaum, 1990; Zeanah, Boris, & Larrieu, 1997; Coyl, Roggman, & Newland, 2002). In comparison to middle-income mothers, low-income mothers have a fourfold risk for serious depressive symptoms (Lanzi, Pascoe, Keltner, & Ramey, 1999; Brown & Moran, 1997). Many low-income Latina mothers face additional stressors associated with struggles to acculturate, lack of English proficiency, lack of education and literacy in their native language, and high maternal burden (United States Department of Health and Human Services, n.d.; Knight, Viridin, & Roosa, 1994; Leadbeater & Bishop, 1994; Flores, Bauchner, Feinstein, & Nguyen, 1999; National Council of La Raza, 2001). These additional factors place them at

very high risk of developing and struggling silently with chronic depressive symptoms (National Council of La Raza, 2001). Since the impact of maternal depressive symptoms on the infant or toddler's mental health is intensified in the presence of social and environmental stressors (Rutter & Quinton, 1984; Goodman & Gotlib, 1999), the infants and toddlers of symptomatic monolingual Spanish-speaking mothers are at great risk for insecure attachment, delayed language, and later behavior problems (Coyle et al., 2002). Furthermore, these mothers are unlikely to receive mental health treatment, especially if they must access the scant supply of culturally competent providers who speak Spanish with enough fluency to conduct mental health intervention (United States Department of Health and Human Services, n.d.).

North Carolina's population had a rapid increase (394%) in newly immigrated Hispanic citizens, most of whom were monolingual Spanish-speaking (National Council of La Raza, 2001; State of North Carolina Office of State Budget, 2001). Early Head Start (EHS) programs in North Carolina reached out to these families through bilingual EHS staff who provided culturally congruent child-development interventions. Our university research team was told by EHS home-based staff serving these families that many of the mothers were struggling with depressive symptoms. Our EHS partners identified that these mothers needed specialized mental health intervention in order to fully participate in EHS programming.

In collaboration with three EHS programs serving monolingual Spanish-speaking Latina mothers (Orange County, N.C. EHS; Asheville Preschool EHS; Western Carolina Community Action EHS), we tested a short-term, in-home, interpersonal intervention designed to complement regular EHS programming. The intervention was based on a synthesis of interpersonal theory (Peplau, 1952) with Interpersonal Therapy (Klerman, 1984) in which the interpersonal relations of a mother were the target for intervention strategies. The mother was helped to change her relations with others (including more effective parenting even in the presence of depressive symptoms), improve her social support, alter noxious life issues, and focus her energy on key depressive symptoms. Through these changes, her self-efficacy increased and her depressive symptoms were predicted to diminish. The intervention had already shown success for non-Latina mothers (Beeber, Canuso, Holditch-Davis, Belyea, & Funk, 2004) and we made modifications in the intervention to fit our Latina mothers. Our goals were to (a) test whether mothers receiving the intervention show reduced maternal depressive symptom severity, improved mother-child interactions, and enhanced mental health of their infant or toddler; (b) explore whether maternal self-efficacy mediates the effects of the intervention on depressive symptom severity and mother-infant/toddler interactions; (c) explore whether factors such as maternal characteristics and degree of burden modify the outcome of the intervention, and (d) test whether mothers receiving the intervention report greater use of EHS resources than mothers in the usual care group.

We paired an interventionist (a master's-prepared psychiatric mental health nurse) with a bilingual Early Head Start home-based or center-based staff person. The EHS staff person received a manualized course in mental health interpretation, and then the team was trained to work together. The intervention was initiated by the team within 1 week after baseline data collection and consisted of 16 contacts (10 face-to-face, 5 home visitor-administered "booster sessions" and a termination session) over 19 weeks. We translated supporting intervention materials into Spanish, modified them to achieve semantic and linguistic congruence, and integrated the fathers into the intervention.

We used a randomized two-group, repeated measures design with one group receiving the intervention and usual care from EHS, and the other group receiving usual care from EHS.

The usual-care group was treated as a waiting list condition, as all participating mothers were offered the intervention. To be eligible, mothers had to be at least 15 years old, have an EHS-enrolled child between 6 weeks and 30 months, and be the EHS child's primary caretaker. Six weeks was an established marker for the end of transient "baby blues" (American Psychiatric Association, 2000) and the upper age limit for the child was designed to ensure that the family was receiving EHS services throughout the intervention. All mothers scoring 16 to 60 (maximum score) on the Center for Epidemiological Studies-Depression scale (CES-D) (Radloff, 1977) were invited to participate. Mothers were excluded if they were regularly attending psychotherapy or drug treatment twice monthly or more often, taking daily psychotropic medication, or were unable to give consent or assent.

Research outcome measures. Data were collected at four key time points: at week 1 (baseline/*T1*), prior to random assignment; at week 14 (*T2*) when intervention mothers were midway through the intervention and the maximum effect of the intervention was present; at week 22 (*T3*) when intervention mothers had completed the intervention; and at week 26 (*T4*) 1 month after completion of the intervention after they returned to EHS usual care. All interviewers were fluently bilingual and our instruments were translated into Spanish and were read aloud to mothers to adjust for literacy difficulties. The primary outcome—maternal depressive symptoms (CES-D), a mediator—self-efficacy, and several moderators (e.g., acculturation) of the intervention effect were measured. Our maternal-child interaction outcomes were derived from the Mother-Child Observation, a 45-minute unstructured videotape of the mother and child in their home, coded for critical behaviors (Holditch-Davis, Bartlett, & Belyea, 2000) and supplemented by additional observational ratings. Coders of Latino background verified all coded material for cultural accuracy.

Project 4: Group-based Mental Health Interventions for Teen Mothers

Early Head Start-Tulane University Partnership

Promoting Adolescents to Change Children's Health (PATCCH): A Tulane University and YWCA of Greater Baton Rouge Early Head Start Partnership

Neil W. Boris, M.D. and Sherryl S. Heller, PhD, Principal Investigators

Goals, setting, and design of the project. Adolescent mothers show a curious mixture of behaviors toward their infants when compared to older mothers: adolescent mothers, as a group, are less supportive and more detached from their infants while also being more intrusive. While there is variability in parenting behaviors even among young mothers, observations of young high-risk parents of children enrolled in Early Head Start are concerning (Berlin et al., 2002). From the perspective of attachment theory, parental detachment mixed with intermittent intrusiveness negatively impacts the infant's developing attachment relationship (Peck, 2003). Organized attachment behavior is a foundation of infant mental health and should be a primary focus of intervention in Early Head Start programs (van den Boom, 1994). Fortunately, promising approaches that are designed to impact different levels of parenting and, over time, promote organized attachment are available. However, research confirming which approaches are most efficacious with the high-risk groups represented in Early Head Start programs is lacking. It may be that a well-tested educational intervention is a cost-effective way to strengthen an adolescent mother's parenting capacity. On the other hand, cumulative social risk, combined with negative experiences of having been parented, may be forces powerful enough to fundamentally diminish a young mother's capacity to reflect on her developing infant's thoughts and feelings. If an educational approach is not intensive enough to strengthen parenting capacity in adolescent parents facing the highest

levels of social risk, then a more costly therapy approach is warranted.

Tulane University partnered with two model programs administered by the YWCA of Greater Baton Rouge (in Louisiana) to conduct a comparative study of two group-based parenting programs. The YWCA programs served adolescent and young adult African American mothers living in an urban high-crime area. We compared two interventions because it is an empirical question as to whether provision of knowledge and support is sufficient to “correct” unrealistic expectations and, in turn, diminish parental insensitivity, or whether knowledge and support alone are not enough to change parenting patterns in a high-risk sample. The first intervention, the Nurturing Parent program (NP) was an education and support intervention, while the second, the Circle of Security protocol (COS) was a therapy model. Both interventions were theoretically grounded, had been extensively studied, and were manualized (although manualization was not complete for the COS protocol and our study served to further this process). The COS was a qualitatively different approach in that it targeted both the level of behavior (e.g., through education) *and* the level of internal working models using a framework based on attachment theory (Boris, Wheeler, Heller, & Zeanah, 2000; Marvin, Cooper, Hoffman, & Powell, 2003).

The question of which intervention is more effective can best be answered by a randomized, controlled design. However, given the parenting needs of the clients, our EHS partners convinced us that a no-intervention control group would be inconsistent with the local program philosophy. What follows is a complete description of the interventions.

The Nurturing Parent Program. The Nurturing Parent program (NP) is actually a series of validated programs aimed at stopping the child abuse cycle through the building of parenting skills. Each individual program in the NP series is designed for families at risk for abuse and neglect, although factors such as parental age, culture, and specific developmental needs have led to the creation of a series of curricula for different groups of caregivers. Each curriculum within the series has been field-tested at multiple sites and a validation report has been published (Bavolek, 1996).

The specific Nurturing Parent program designed for teenage parents was validated by 12 agencies providing parenting education to teenage parents. At a 1-year follow-up, 97% of parents reported the program had an overall positive impact on their parenting skills (Bavolek, 1996). This data has led the Strengthening Families Organization to certify the NP as a model parenting program (see www.strengtheningfamilies.org).

The Circle of Security. In two consecutive studies funded by ACF, a brief, intensive small-group protocol (the Circle of Security, COS) was developed and tested through an earlier Head Start-University Partnership. The first study established that the protocol was effective in improving the attachment relationship between Head Start mothers and their 12–48-month-olds (Marvin et al., 2003) and the second study, which is ongoing, is aimed at both creating a manual for the COS protocol and establishing that the intervention can be successfully carried out. The Circle of Security intervention is a group-based protocol that uses edited videotapes of mothers interacting with their children to encourage these mothers to increase their sensitivity and appropriate responsiveness to their children’s signals, their ability to reflect on their own and their child’s behavior, and to reflect on experiences in their own histories that affect their current caregiving patterns (Marvin et al., 2003).

The COS protocol addresses how each parent’s internal working model of relationships influences their caregiving. A key process is improving the parents’ reflective function by guiding them through real interactions with their own children using videotape examples. By

reviewing each parent's individual parenting "style" with the group, a process-enhancing reflective function is maintained week-to-week (Fonagy & Target, 2005). Furthermore, by editing the tapes to capture "teachable moments" for both the individual on screen and her group members, support and sharing are promoted while addressing actual instances of parenting "success" and "challenges."

We engaged our partners in focus groups during the first year of the grant prior to starting the intervention. We met separately with center staff, mothers, fathers, and grandparents. The groups discussed parenting in violent communities, shared parenting (e.g., kinship and other informal parenting networks), educational needs of parents, and staff reflections on serving adolescent parents. The groups helped us engage the staff and mothers and develop ways of measuring father or extended family support.

Research outcome measures. Because research suggested that observed parenting "sensitivity" of adolescent mothers was not unidimensional, we used more than one validated continuous measure capturing more than one parenting construct. Along with the shared measures already described, we added a standardized questionnaire focusing on the mother and child's exposure to trauma including domestic violence and standardized observational measures assess the child's attachment behavior, the mother's response to the child's attachment behavior, and aspects of the parent-child relationship such as how the pair shared affection, the degree to which they cooperated, and how they handled disagreements. Finally we administered two semistructured interviews to the mother that inquired about the child's caregiving environment, the mother's own history of being parented, the mother's perspective of her child's behavior, and the mother's perspective about her relationship with her child.

The assessment was repeated three times: at baseline before the mother began intervention, at the end of the intervention, and approximately 1 year after completing the intervention. We calculated two sets of analyses to compare: (1) the pre- and post-intervention data, and (2) the assessments from all three time periods (preintervention, immediately postintervention, and 1 year postintervention). We also examined outcome differences between the two parenting protocols. Our partnership offered the chance to understand the factors associated with parenting behaviors among high-risk African American young mothers and to assess the impact of two distinct interventions designed to improve parental reflective function and parent-child attachment.

Project 5: Parent/Infant/Toddler Psychotherapy for High-Risk Families

Early Head Start-University of Miami Partnership

Infusing Infant Mental Health Services in Early Head Start: A Collaborative Research-based Approach

Neena M. Malik, PhD, Principal Investigator

Goals, setting, and design of the project. A primary finding in studies on infant-toddler development is that poverty is a major risk factor for delays in child development (Aber et al., 2000) and serves as a marker of potential other risk factors, including parental stress and depression, low maternal education, violence in the home or in the community, and poor quality of the parent-child relationship. This constellation of factors can place infants and toddlers at risk for delays in social and emotional development, as well as other areas of functioning (Aber, 1994; Hooper, Burchinal, Roberts, Zeisel, & Neebe, 1998; Osofsky, 1995; Sameroff & Fiese, 2000). Transactional approaches to child development suggest, however, that a healthy, nurturing, emotionally attuned parent-child relationship, and the child competencies that can emerge from such a healthy relationship, can act as important buffers against

the potential negative consequences of poverty, trauma, and other risk factors (Lynch & Cicchetti, 1998; Sameroff & Chandler, 1975).

Extant data suggested that parent-infant/toddler psychotherapy was a promising approach to improving the quality of the parent-child relationship as well as reducing infant behavioral and emotional symptoms, parenting stress, and parental depression (Cohen et al., 1999; Cramer, 1998; Lieberman, Weston, & Pawl, 1991; Lieberman, Silverman, & Pawl, 2000; Robert-Tissot et al., 1996). Research also suggested that it is through the parent-child relationship that interventions should take place, in order to most effectively help young children move toward healthy development in the face of trauma and other risk factors (Lieberman, 2004). Most research in this area to date focused on two therapeutic techniques, interaction guidance (McDonough, 1993, 2000), and infant-parent psychotherapy (Lieberman et al., 2000).

The Infusing Infant Mental Health Services in Early Head Start program was a collaborative effort between the Miami-Dade County Community Action Agency Early Head Start program and the University of Miami. It emerged from a prior collaborative relationship that developed when the Miami Head Start/Early Head Start program began to dedicate additional resources to mental health consultation. There was, and continued to be, a high awareness of the stressors and challenges facing Early Head Start families in the diverse urban community of Miami. Supportive and therapeutic resources for families, however, had been scarce and difficult to access. As such, the desire to create an infant mental health infrastructure in Early Head Start in Miami led to the seeking of funding and development of the Infusion project.

There were three goals of the Infusion project. The primary goal was to develop an infrastructure to support infant mental health in Early Head Start that focused on strengthening the parent-child bond and healthy socioemotional development. Second, we identified community-level, family-level, and individual factors related to infant-toddler mental health, especially, the exposure to trauma and its relation with developmental functioning. Third, we evaluated therapeutic efficacy of infant psychotherapy by conducting pre- and post-assessments with treatment families and comparing outcomes with an untreated group of families. By better understanding what was associated with emotional, behavioral, and relational disturbance, intervention could be directed at both etiology and symptoms, leading to more effective treatment and better outcomes for children and families.

The Early Head Start program in Miami-Dade County served over 500 children across 12 centers. The Infusion project focused on four of those centers, including one near Little Haiti, in the northeast of the county; one in a northwestern area serving a largely Hispanic or Latino population; one in the southern end of the county, serving an African American/Hispanic or Latino population; and one in deep South Miami-Dade, serving a population that includes homeless families. Across the four sites, 62% of the participating families were African American; 15% were Haitian or other Caribbean; and 23% were Hispanic/Latino. Because this project took place in a very low-income, generally urban environment, where numerous risk factors were present in the lives of participants, a program that included intensive, parent-infant psychotherapy was designed.

In our sample, families on average earned approximately \$13,000 a year, with an average of four people being supported by that income. Parent reports indicated that approximately 30% of children had witnessed community violence, and over 60% of children had experienced at least one traumatic event in their lives. In addition, 40% of parents reported experiencing depression symptoms on or above the cutoff on the CES-D. Given the experiences of

families in our centers, an approach that included intensive support for the parent-child dyad was deemed important for improving social and emotional development in children, as well as parental mental health.

In our project, we designed a therapeutic intervention that was based on interaction guidance and infant-parent psychotherapy models that were flexible and sought to meet the needs of the families in Early Head Start. The initial assessment session included all of the cross-site measures, the Bayley Scales of Infant Development II, Mental Development Index (Bayley, 1994), the full CBCL (Achenbach & Rescorla, 2000), a language development screener, measures of exposure to trauma and violence, and a post-traumatic stress disorder (PTSD) symptom checklist, as well as a videotaped parent-child semistructured interaction. Following that assessment session, we used the videotape to conduct a feedback session to the parents, based on the interaction guidance model (McDonough, 1993, 2000). The goals of this feedback session were to (1) elicit parent concerns about their child; (2) respond to those concerns; (3) help parents understand their child's level of developmental functioning; (4) provide positive feedback to parents regarding their parenting behaviors; and (5) provide constructive instructions regarding how to increase affect attunement and relationship positivity. All parents were also given a full report of their child's developmental and behavioral functioning, based on the assessment data.

At the conclusion of the feedback session, all parents were invited to participate in a more intensive course of infant-parent psychotherapy, based on Lieberman and colleagues' work (Lieberman et al., 2000). In part, all parents were invited in order to ensure randomization of treatment for analyzing treatment effectiveness. The primary goal of therapy was to strengthen the parent-child attachment relationship. Parents were offered up to 26 sessions of therapy, with one session a week. Generally, therapy was conducted as every other session with the parent alone, as parents identified many issues (including their own trauma history) that required individual support. We provided all aspects of the program on site at Early Head Start.

All families at all four sites were recruited to participate in the Infusion project. Approximately two thirds of all families participated in the project. Follow-up assessments were conducted at 6 and 12 months. At each of these time points, parents were again offered an interaction guidance-like feedback session and a report of their child's functioning. Many families used those reports to obtain early intervention services for their children.

Research outcome measures. At each time point, as noted above, both the cross-site and site-specific measures were administered with each family. As such, longitudinal assessment of cognitive, language, and social and emotional development, as well as the quality of the parent-child relationship, were conducted. In order to assess efficacy of therapy, a group design was employed (treatment and comparison). Examination of mediators and moderators of adjustment included exposure to conflict and violence in the home and in the community, as well as exposure to trauma.

DEVELOPMENT OF THE COMMON DATABASE

The E-PIRC consortium was committed from the start to exploring the larger questions about risks to infant/toddler mental health by generating data across the five projects. One or more of a common core of concepts—parental mental health, parenting interactions, family stress, and family and neighborhood characteristics—were addressed in all five projects. The rela-

TABLE 2. *Concepts and Measures Comprising the E-PIRC Cross-site Database*

Concept	Measures
Parental Mental Health	Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977)
Parenting Interactions	Parenting Stress Index, Short Form (PSI/SF) (Abidin, 1990)
Family Stress	Family Baseline Information Form (E-PIRC)
Family and Neighborhood Characteristics	Family Baseline Information Form (E-PIRC)
EHS Provider Competence	Service Provider Questionnaire (Squires, & Twombly, 2003)
Infant/toddler Social-Emotional Competence	Ages & Stages Social/Emotional (ASQ-SE) (Squires Bricker & Twombly, 2002) Child Behavior Checklist (CBCL), Aggression Subscale (Achenbach & Rescorla, 2000) Infant-Toddler Social Emotional Assessment (ITSEA) (Carter & Briggs-Gowan, 2000) Subscales: Negative emotionality Compliance Prosocial peer relations

relationship of each concept to infant/toddler mental health was theoretically and empirically supported by related literature and by data from the Early Head Start Research and Evaluation project. The E-PIRC researchers decided to use the same instruments in all five studies at baseline and follow-up to assess these constructs. A cross-site questionnaire was developed that included information about family and environmental factors. In addition, two parent measures and three infant-toddler outcome measures thought to be sensitive to all five approaches were adopted as well. Finally, EHS provider characteristics and competence was proposed to be either a mediator or moderator of the intervention effect in all of the projects. The instruments comprising the E-PIRC longitudinal database are presented in Table 2. Subsequent qualitative data were collected on program characteristics and the impact of having these intervention projects in existing programs. Having the core set of measures will allow the consortium to address many common questions, including the following:

- What risk and protective factors are associated with parent and child well-being? (See Malik et al., this issue.)
- Do some approaches to supporting mental health seem to work especially well in Early Head Start settings?
- How do family mental health needs vary across settings and populations?
- How do program characteristics interact with implementation of specific mental health interventions?
- What types of programs and at what stage of readiness can optimally support infant-toddler mental health initiatives?

- What needs to be addressed at the program level (communication, reflective supervision, addressing staff mental health issues, etc.) to allow for successful implementation of mental health interventions?
- What staff characteristics and qualifications seem to facilitate implementation of different approaches to supporting mental health?
- What is the influence of program and community context on supporting family mental health?
- And perhaps most centrally, what types of outcomes are associated with different interventions or models of service delivery?

These and other questions that are being investigated through the individual and collaborative work of the consortium will help communities promote the mental health of infants and toddlers amidst tremendous risks posed by poverty and its byproducts.

DISCUSSION AND CONCLUSIONS

The five E-PIRC approaches have the potential to provide guidance for EHS administrators interested in implementing infant/toddler mental health in their programs.

First, all of the projects acknowledged the importance of parents as critical to the mental health of their infants and toddlers and either provided supports to strengthen parenting or reduced parental challenges that placed the child in jeopardy. A variety of approaches varied the efficacy of intervening directly with parents or indirectly by building EHS staff competencies. However, the goal of enhancing the parent-child relationship and promoting healthy interactions was inherent in each approach.

Second, each of the projects brought mental health professionals directly in contact with the program staff. The proximity of professionals to staff as well as the need for each project to place infant/toddler mental health at the forefront allowed mental health to become part of the fabric of each program. Over time, the destigmatizing effect of this proximity is expected to strengthen the capacity of each program to fully implement the performance standards for mental health.

The diversity of the five intervention approaches will have utility for EHS programs. Each EHS program is unique in its needs, populations served, resources, and readiness to undertake infant/toddler mental health intervention. Having an array of approaches that are effective will offer program administrators a choice at what level to intervene and whether intervention will target a specific risk (e.g., exposure to violence; parental depression) or foster more positive parent-child interactions. Having choices such as these will allow each EHS program to support infant/toddler and parent mental health in their program.

REFERENCES

- Aber, J.L. (1994). Poverty, violence, and child development: Untangling family and community level effects. In C. Nelson (Ed.), *Threats to optimal development: Integrating biological, psychological, and social risk factors* (pp. 229–272). Hillsdale, NJ: Erlbaum.
- Aber, J.L., Jones, S., & Cohen, J. (2000). The impact of poverty on the mental health of very young children. In C.H. Zeanah (Ed.), *Handbook of infant mental health* (2nd ed., pp. 113–138). New York: Guilford Press.

- Abidin, R. (1990). Parent stress index short form: Test manual. Charlottesville: University of Virginia, Department of Pediatrics.
- Achenbach, T., & Rescorla, L. (2000). Child behavior checklist / 1 1/2–5 (CBCL). Burlington: University of Vermont, Department of Psychiatry.
- Administration for Children and Families. (2002). Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start. Washington, DC: U.S. Department of Health and Human Services.
- Administration on Children, Youth and Families. (2000). A Commitment to Supporting the Mental Health of Our Youngest Children. Washington, DC: U.S. Department of Health and Human Services. Retrieved October 16, 2006 from http://www.acf.dhhs.gov/programs/core/ongoing_research/imh/imh_intro.html
- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders. Washington, DC: American Psychiatric Association.
- Bavolek, S.J. (1996). Effective family-based approaches to: Treating and preventing child abuse and neglect. Research and Validation Report of the Nurturing Programs. Park City, UT: Family Development Resources.
- Bayley, N. (1994). The Bayley Scales of Infant Development (2nd ed.). San Antonio, TX: Psychological Corp.
- Beeber, L.S., Canuso, R., Holditch-Davis, D., Belyea, M., & Funk, S.G. (2004). In-home intervention for depressive symptoms with low-income mothers of infants and toddlers. *Health Care for Women International*, 25, 561–580.
- Berlin, L., Brady-Smith, C., & Brooks-Gunn, J. (2002). Links between childbearing age and observed maternal behaviors with 14-month-olds in the Early Headstart research and evaluation project. *Infant Mental Health Journal*, 23, 104–129.
- Boris, N.W., Wheeler, E.E., Heller, S.S., & Zeanah, C.H. (2000). Attachment and developmental psychopathology. *Psychiatry: Interpersonal and Biological Processes*, 63, 74–83.
- Bricker, D., & Squires, J. (1999). Ages and stages questionnaires (ASQ): A parent-completed child-monitoring system (2nd ed.). Baltimore: Brookes.
- Brown, G.W., & Moran, P.M. (1997). Single mothers, poverty and depression. *Psychological Medicine*, 27, 21–33.
- Carter, A., & Briggs-Gowan, M. (2000). Infant toddler social and emotional assessment (ITSEA) manual, version 1.0. New Haven, CT: Early Development Project.
- Cohen, N.J., Muir, E., Lojkasek, M., Muir, R., Parker, C.J., Barwick, M., et al. (1999). Watch, wait, and wonder: Testing the effectiveness of a new approach to mother-infant psychotherapy. *Infant Mental Health Journal*, 20, 429–451.
- Coyl, D., Roggman, L., & Newland, L. (2002). Stress, maternal depression, and negative mother-infant interactions in relation to infant attachment. *Infant Mental Health*, 23 (1–2): 145–63.
- Cramer, B. (1998). Mother-infant psychotherapies: A widening scope in technique. *Infant Mental Health Journal*, 19, 151–167.
- Dombro, A., Colker, L., & Dodge, D. (2002). The creative curriculum for infants and toddlers. Clifton Park, NY: Delmar Thomson Learning.
- Flores, G., Bauchner, H., Feinstein, A.R., & Nguyen, U.S. (1999). The impact of ethnicity, family income, and parental education on children's health and use of health services. *American Journal of Public Health*, 89(7), 1066–1071.
- Fonagy, P., & Target, M. (2005). Bridging the transmission gap: An end to an important mystery of

- attachment research? *Attachment in Human Development*, 7(3), 333–343.
- Goldberg, S. (1977). Social competence in infancy: A model of parent-infant interaction. *Merrill-Palmer Quarterly*, 23, 163–177.
- Goodman, S.H., & Gotlib, I.H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychological Review*, 106 (3), 458–490.
- Hall, L. (1990). Prevalence and correlates of depressive symptoms in mothers of young children. *Public Health Nursing*, 7 (2), 71–79.
- Harnish, J., Dodge, K., & Valente, E. (1995). Mother-child interaction quality as a partial mediator of the roles of maternal depressive symptomatology and socioeconomic status in the development of child behavior problems. *Child Development*, 66, 739–53.
- Holditch-Davis, D., Bartlett, T.R., & Belyea, M. (2000). Developmental problems and the interactions between mothers and prematurely born children. *Journal of Pediatric Nursing*, 15(3), 157–167.
- Hooper, S.R., Burchinal, M.R., Roberts, J.E., Zeisel, S., & Neebe, E.C. (1998). Social and family risk factors for infant development at one year: An application of the cumulative risk model. *Journal of Applied Developmental Psychology*, 19, 85–96.
- Klerman, G.L. (1984). *Interpersonal psychotherapy of depression*. New York: Basic Books.
- Klimes-Dougan, B., Free, K., Ronsaville, D., Stilwell, J., Welsh, J., & Radke-Yarrow, M. (1999). Suicidal ideation and attempts: A longitudinal investigation of children of depressed and well mothers. *Journal of the Academy of Child and Adolescent Psychiatry*, 38(6), 651–659.
- Knight, G.P., Viridin, L.M., & Roosa, M. (1994). Socialization and family correlates of mental health outcomes among Hispanic and Anglo American children: Consideration of cross-ethnic scalar equivalence. *Child Development*, 65(1), 212–224.
- Lanzi, R., Pascoe, J., Keltner, B., & Ramey, S. (1999). Correlates of depressive symptoms in a national Head Start program sample. *Archives of Pediatrics and Adolescent Medicine*, 153(8), 801–807.
- Leadbeater, B.J., & Bishop, S.J. (1994). Predictors of behavior problems in preschool children of inner-city Afro-American and Puerto Rican adolescent mothers [Special issue]. *Child Development*, 65(2), 638–648.
- Lester, B., Boukydis, C., & Twomey, J. (2000). Maternal substance abuse and child outcome. In C. Zeanah (Ed.), *Handbook of Infant Mental Health Child Development*, 2nd edition, 16–175. New York: Guilford Press.
- Lieberman, A.F. (2004). Traumatic stress and quality of attachment: Reality and internalization in disorders of infant mental health. *Infant Mental Health Journal*, 25, 336–351.
- Lieberman, A.F., Silverman, R., & Pawl, J.H. (2000). Infant-parent psychotherapy: Core concepts and current approaches. In C. Zeanah (Ed.), *Handbook of infant mental health* (2nd ed., pp. 472–484). New York: Guilford Press.
- Lieberman, A.F., Weston, D.R., & Pawl, J.H. (1991). Preventive interventions and outcome with anxiously attached dyads. *Child Development*, 62, 199–209.
- Lynch, M., & Cicchetti, D. (1998). An ecological-transactional analysis of children and contexts: The longitudinal interplay among child maltreatment, community violence, and children's symptomatology. *Development and Psychopathology*, 10, 235–257.
- Lyons-Ruth, K., Connell, D., & Grunebaum, H. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development*, 61, 85–98.
- Malik, N.M., Boris, N.W., Heller, S.S., Jones Harden, B., Squires, J., Chazan-Cohen, R., et al. (2007).

- Risk for Maternal Depression and Child Aggression in Early Head Start Families: A test of ecological models. *Infant Mental Health Journal*, 28, 171-191.
- Marvin, R., Cooper, G., Hoffman, K., & Powell, B. (2003). The circle of security project: Attachment-based intervention with caregiver-preschool child dyads. *Attachment and Human Development*, 4, 107-124.
- McDonough, S.C. (1993). Interaction guidance: Understanding and treating early infant-caregiver relationship disturbances. In C. Zeanah (Ed.), *Handbook of infant mental health* (pp. 414-426). New York: Guilford Press.
- McDonough, S.C. (2000). Interaction guidance: An approach for difficult to engage families. In C. Zeanah (Ed.), *Handbook of infant mental health* (2nd ed., pp. 485-493). New York: Guilford Press.
- 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, L.J., & Stott, F. (2000). Paraprofessionals revisited and reconsidered. In J. Shonkoff & S. Meisels (Eds.), *Handbook of early childhood intervention*, 2nd edition. New York: Cambridge University Press.
- National Council of La Raza. (2001). *Beyond the census: Hispanics and an American agenda*. Washington, DC: Office of Research, Advocacy, and Legislation at the National Council of La Raza.
- Osofsky, J.D. (1995). The effects of exposure to violence on young children. *American Psychologist*, 50, 782-788.
- Peck, S.D. (2003). Measuring sensitivity moment-by-moment: A microanalytic look at the transmission of attachment. *Attachment and Human Development*, 5, 38-63.
- Peplau, H. (1952). *Interpersonal relations in nursing*. New York: Springer.
- Radloff, L.S. (1977). The CES-D scale: A self-reported depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.
- Robert-Tissot, C., Cramer, B., Stern, D.N., Serpa-Rusconi, S., Bachmann, J-P., Palacio-Espasa, F., et al. (1996). Outcome evaluation in brief mother-infant psychotherapies: Report on 75 cases. *Infant Mental Health Journal*, 17, 97-114.
- Rutter, M., & Quinton, D. (1984). Parental psychiatric disorder: Effects on children. *Psychological Medicine*, 14(4), 853-880.
- Sameroff, A.J., & Chandler, M.J. (1975). Reproductive risk and the continuum of caretaking casualty. In F. Horowitz, M. Hetherington, S. Scarr-Salapatek, & G. Siegel (Eds.), *Review of child development research* (Vol. 4, pp. 187-244). Chicago, IL: University of Chicago Press.
- Sameroff, A.J., & Fiese, B.H. (2000). Models of development and developmental risk. In C. Zeanah (Ed.), *Handbook of infant mental health* (2nd ed., pp. 3-19). New York: Guilford Press.
- Squires, J., Bricker, D., & Twombly, L. (2002). *Ages and stages questionnaires: Social-emotional*. Baltimore: Brookes.
- Squires, J., & Twombly, L. (2003). *Service provider questionnaire*. Unpublished. Available from the Center on Human Development, University of Oregon.
- State of North Carolina Office of State Budget, PaM. (2001, March). *North Carolina growing rapidly and becoming more diverse*. Retrieved March 2002 from <http://www.osbm.state.nc.us/osbm/>
- Twombly, E., Waddell, M., & Harrison, P. (2003). *Home visiting scale*. Unpublished. Available from the Center on Human Development, University of Oregon.

- United States Department of Health and Human Services. (n.d.). mental health: culture, race, and ethnicity: A supplement to mental health: a report of the surgeon general. Retrieved April 1, 2002, from <http://www.surgeongeneral.gov/library/mentalhealth/cre/default.asp>
- van den Boom, D.C. (1994). The influence of temperament and mothering on attachment and exploration: An experimental manipulation of sensitive responsiveness among lower-class mothers with irritable infants. *Child Development*, 65, 1457–1477.
- Walker, H., Stiller, B., Severson, H., Feil, E., & Golly, A. (1998). First step to success: Intervening at the point of school entry to prevent antisocial behavior patterns. *Psychology in the Schools*, 35, 259–269.
- Waters, E., & Sroufe, L.A. (1983). Social competence as a developmental construct. *Developmental Review*, 3, 79–87.
- Zeanah, C., Boris, N., & Larrieu, J. (1997). Infant development and developmental risk: A review of the past 10 years. *Journal of the American Child and Adolescent Psychiatry*, 36(2), 165–177.

Copyright of *Infant Mental Health Journal* is the property of *Michigan Association of Infant Mental Health* and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.