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## The Importance of Early Parenting in At-Risk Families and Children’s Social-Emotional Adaptation to School

Elizabeth McFarlane, PhD, MPH<sup>\*,‡</sup>, Rachel A. B. Dodge, MD, MPH<sup>\*</sup>, Lori Burrell, MA<sup>\*</sup>, Sarah Crowne, PhD<sup>\*</sup>, Tina L. Cheng, MD, MPH<sup>\*</sup>, and Anne K. Duggan, ScD<sup>\*,‡</sup>

<sup>\*</sup>Johns Hopkins University School of Medicine, Baltimore, Maryland <sup>‡</sup>University of Hawaii John A. Burns School of Medicine, Honolulu, Hawaii

### Abstract

**Objective**—To determine the specific aspects of early parenting in psychosocially at-risk families most strongly related to children’s social-emotional adaptation to school.

**Methods**—Cohort study of families (n=318) identified as at-risk for maltreatment of their newborns. Quality of early parenting was observed in the home when the child was one year old. Social-emotional adaptation to school was reported by teachers in first grade. Multivariable models assessed the independent influence of early parenting variables on social-emotional adaptation.

**Results**—Early parenting and social-emotional adaptation to school varied greatly across families. Parental warmth was associated with lower teacher ratings of shyness, concentration problems, and peer rejection. Parental lack of hostility was associated with decreased teacher ratings of concentration problems and peer rejection. Parental encouragement of developmental advance was associated with lower ratings of aggression and peer rejection. Provision of materials to promote learning and literacy was associated with lower ratings of concentration problems.

**Conclusions**—In this sample of families with multiple psychosocial risks for child maltreatment, specific aspects of early parenting were associated with better social-emotional adaptation to school in the first grade in theoretically predicted ways. Improving parental knowledge about positive parenting via anticipatory guidance should be a focus of well child visits. Well child visit-based interventions to improve the quality of early parenting especially among at-risk families should be studied for their impact on parenting behavior and on children’s successful social-emotional adaptation to school. Primary care providers should reinforce complementary services, such as home visiting, that seek to promote positive parenting.

### Key Words (MeSH)

Parenting; Child Rearing; Parent-Child Relations; Social Adjustment; Social Behavior (Aggression, Shyness, Rejection); Vulnerable Populations

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Author contact information: Elizabeth McFarlane, PhD, MPH, Division of General Pediatrics and Adolescent Medicine, Johns Hopkins School of Medicine, 200 North Wolfe Street, Baltimore, MD 21287, emcfar12@jhmi.edu.

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## INTRODUCTION

Parenting is a strong influence on early childhood development, including social-emotional development.<sup>1-3</sup> Family psychosocial functioning is associated with the quality of parenting and with child outcomes.<sup>1-4</sup> Children who experience psychosocial stressors such as poverty, domestic violence, parental substance abuse, physical and social disorder are at the greatest risk for social and behavioral problems.<sup>1-4,5</sup>

Among families with multiple psychosocial stressors, however, there is considerable variation in children's social and behavioral outcomes. Theories of human development, including models of vulnerability and resilience,<sup>6</sup> and a growing body of empirical evidence suggest the reasons for variation. Conger's Family Stress Theory,<sup>4</sup> for example, posits that the economic pressures on poor families adversely affect children's development through their mediating effects on parental mental health, caregiver relationships, and parenting practices. Thus, in poor families where caregivers are able to provide nurturing parenting despite economic hardship and other stressors, children's behavioral outcomes will be more favorable. This argues for the growing importance of the pediatrician's role in addressing the "Millennial Morbidity"<sup>7</sup> through preventive efforts to promote positive parenting.

Older children and adults can take actions to reduce or avoid stressors. However, very young children have far less control over their exposure to stressors. Bowlby's Attachment Theory<sup>8</sup>, holds that infant development is highly dependent on caregiver behavior. Infants need consistent warmth and nurturance – encouragement of their exploration to foster cognitive and social development and sensitivity to their distress to promote social development and help them develop the ability to self-regulate in the face of stressors.

Because assuring positive child development is part of the mission of pediatrics, it follows that promoting positive parenting must be a part of the role of pediatric providers. This is especially true for primary care providers. The frequency of visits in early childhood and the growing focus on psychosocial health in pediatrics<sup>9</sup> put pediatric primary care providers in a unique position to promote positive parenting.

National professional associations such as the American Academy of Pediatrics (AAP) offer guidelines to pediatric providers for activities to be carried out in health supervision visits. The AAP's guidelines for health supervision, Bright Futures, for example, specifies broad aspects of parent-child interaction to be observed during well child visits and anticipatory guidance to be provided to promote positive parent-child interaction.<sup>9</sup> Given the time constraints of visits, it would be valuable to know what specific aspects of parenting have the greatest impact on children's social-emotional development, especially for families at psychosocial risk for poor parenting.

One of the key developmental tasks of life is making a successful transition to school. By improving our understanding of the specific early parenting behaviors associated with a successful transition to school among children in at-risk families, we can gain insight into what aspects of early parenting to promote during well-child visits. The goal of this study, therefore, is to determine what specific aspects of early parenting in psychosocially at-risk families are most strongly related to children's social-emotional adaptation to school.

## METHODS

### Study Design & Sample

This was a cohort study of families enrolled in a randomized trial of Hawaii's Healthy Start Program (HSP), a paraprofessional home visiting program for families at risk for abuse or

neglect of their newborns. The program serves families at risk for maltreatment of their newborns. The HSP's early identification component identifies at risk families through population-based screening and assessment using the Kempe Family Stress Checklist<sup>10</sup>. Families in which either parent scored  $\geq 25$  are defined as at risk and are eligible for the program. In this study, HSP early identification workers identified at risk families using the usual program protocol. When an eligible family was identified, the staff member described the HSP and the evaluation and obtained the mother's signed, informed consent to take part. By study protocol, the HSP staff member called the evaluation office for group assignment of all HSP eligible families. Evaluation staff entered the name of the newly enrolled family in the next open study number in the study log, which indicated the group assignment. Group assignments were predetermined using a table of random numbers. Details regarding the HSP model, sample recruitment, random group assignment, and representativeness are described elsewhere.<sup>11,12</sup>

Study methods were approved by the institutional review boards of the Hawaii Department of Health, the hospitals at which families were recruited, the Johns Hopkins University School of Medicine, and the research offices of the Hawaii Department of Education. Signed informed consent was obtained from mothers at each annual follow-up; assent was obtained from children at the first grade follow up.

This analysis focuses on the 318 families with complete data from three sources: the maternal baseline interview, observation of the home environment when the child was one year old, and teacher ratings of the child's classroom behavior in first grade. Of the 643 families enrolled in the study at the time of the child's birth, 517 (80%) had a home observation of early parenting when the child was one year old, 79 (12%) were lost to follow-up, and 47 (7%) were followed at one year of age, but did not have a home observation of early parenting because the child was not present in the home during data collection. Of the 517 with a home observation at one year, 318 (62%) had a teacher report of social-emotional adaptation to school in first grade, 81 were lost to follow-up, 118 were followed in first grade but did not have the teacher report for the outcome measure of social-emotional adaptation to school. Reasons for lack of teacher report include a family move out of state, data collection during the summer from school, and home schooling of the child.

### Data collection and measurement

Study data were collected by trained research staff who were unaware of group assignment. Structured maternal interviews were completed at the time of the child's birth and when the child was one year of age. Home observations were completed when the child was one year of age. Teacher report on the child's classroom behavior was collected when the child was in first grade.

**Demographic and Psychosocial Covariates**—Risk and protective factors that could moderate the influence of early parenting on child adaptation to school were measured. Child and family demographics were collected by maternal interview at the time of the child's birth. Variables included child attributes (gender and prematurity) and parent attributes (maternal age, race, parity, education, poverty, and relationship with father of baby). Four psychosocial aspects of maternal and family functioning were measured by maternal interview when the child was one year old: maternal parenting stress, depression, substance use, and intimate partner violence. Measurement of these attributes at one year allowed us to assess the influence of the quality of parenting behavior independent of maternal and family psychosocial functioning.

**Maternal Parenting Stress:** The short form of *Parenting Stress Index* (PSI) 13 was used to measure parenting stress by maternal interview when the child was one year old. Based on the developer's recommendation, high parenting stress was defined as a total score above the 90<sup>th</sup> percentile, i.e. a mother was considered positive for high parenting stress if the total PSI score was above the 90<sup>th</sup> percentile as defined by Abidin.

**Maternal Depression:** Maternal depressive symptoms were measured in by interview when the child was one year old using the *Center for Epidemiological Studies Depression Scale* (CESD). 14 Based on a commonly-used cutoff, 15 mothers who scored  $\geq 16$  were categorized as positive for depressive symptoms.

**Maternal Substance Use:** Maternal substance use, including illicit drug use and problem alcohol use, was measured by interview when the child was one year old. The *Addiction Severity Index* was used to measure illicit substance use and problems arising from use. 15 Illicit drug use was defined as any use in the past year. Problem alcohol use was defined as self-report of alcohol use in the past year coupled with a score of  $\geq 2$  on the four-item *CAGE* screener for problems associated with alcohol use (an acronym for "cut down," "annoyed," "guilt," and "eye-opener"). 16 For the present study, mothers were considered positive for substance use if they met either of the criteria above for illicit drug use or problem alcohol use.

**Intimate Partner Violence:** The *Revised Conflict Tactics Scale*, a widely-used self-report instrument, was used to measure partner violence by maternal report when the child was one year old. 17 We defined partner violence as three or more incidents of physical assault by the mother or her partner toward the other in the past year. Thus, mothers reporting 0–2 such incidents were categorized as negative for intimate partner violence. In addition, mothers without a partner were categorized as negative for partner violence.

**'Substantiated Child Protective Services (CPS) Reports:** We provided identifying data on the study sample to the Hawaii State Department of Human Services (HDHS) for computer matching with its CPS files. HDHS staff created a list of perfect and partial matches, using its standard protocol. Our research staff, unaware of family study group assignment, compared the list to all information available in our study records. Using a protocol established for the study, they made a final determination of matches. A family was considered positive for substantiated maltreatment if there was a substantiated report of abuse or neglect within the child's first six years of life.

**Early Parenting—**The infant-toddler version of the *Home Observation for Measurement of the Environment* (IT-HOME) scale was administered when the child was one year old to measure the quality of early parenting and the home environment. 18 The IT-HOME is a 45-item, semi-structured interview/observational measure with well-established validity and internal consistency. Each item is coded by the interviewer on a binary scale (yes/no). Total scores are calculated by summing the number of positive responses. The original subscales were derived by exploratory factor analysis 18 resulting in grouping of some items that might not be conceptually related. 19 Linver, Brooks-Gunn, & Cabrera (2004) categorized IT-HOME items into subscales based on face validity, i.e. they grouped items together into subscales based on theoretical connectivity rather than using statistical analysis. 19 They determined that the five resulting subscales had good internal consistency and predictive validity for cognitive ability and behavior problems at 2 to 3 years through analysis of data from four earlier studies. The current study used these subscales. The *parental warmth* subscale (scores range from 0–7) includes items such as praising the child, conveying positive feelings toward the child, and caressing or kissing the child. The *parental verbal*

*skills* subscale (scores range from 0–3) includes items related to the parents' communication skills such as ease of conversing. The *parental lack of hostility* subscale (scores range from 0–5) includes items that indicate the absence of harsh parent responses to the child's behavior such as shouting, slapping, spanking, or criticizing the child. The *developmental advance* subscale (scores range from 0–4) includes items that evaluate parental teaching such as encouraging development of new skills and structuring play periods. The *learning/literacy subscale* (scores range from 0–10) includes items evaluating the presence of materials that are considered cognitively or linguistically stimulating such as age-appropriate toys and books. Higher scores are more favorable. In the current study, the subscales had strong internal consistency: parental warmth (Cronbach's  $\alpha = .61$ ), parental verbal skills ( $\alpha = .67$ ), parental lack of hostility ( $\alpha = .72$ ), learning/literacy ( $\alpha = .74$ ), and developmental advance ( $\alpha = .82$ ).

**Social-emotional adaptation to school**—The *Teacher Observation of Classroom Adaptation-Revised* (TOCA-R)<sup>20</sup> was used to measure social-emotional adaptation to school. Teachers completed a checklist based on the 24-item interview version of the original TOCA that has been used successfully in other prevention research to assess teacher perceptions of students' social adaptation to the classroom.<sup>20</sup> Teachers rated the child's performance as a student in the previous month (e. g. completes assignments, socializes and interacts with classmates, breaks rules, children seek him/her out to play) on a scale from 1 (not at all) to 6 (always). Twenty of the items map onto 4 subscales that measure levels of prosocial behaviors (shyness subscale, scores range from 4–24), disruptive and aggressive behavior (aggression subscale, scores range from 6–36), cognitive concentration in the classroom (poor concentration subscale, scores range from 7–42) and peer acceptance (peer rejection subscale, scores range from 3–18). Higher scores indicate maladaptation to the classroom. The TOCA-R has good reliability as indicated by test-retest correlations at four months  $>.60$ . Internal consistency of the subscales is strong (Cronbach  $\alpha .79$  to  $.94$ ).<sup>20</sup> Scales have been shown to relate to external criteria.<sup>21</sup> Concurrent validity has been demonstrated by correlations  $>.60$  between the cognitive concentration subscale and the reading total score on the California Achievement Test in 1st grade as well as between the aggressive subscale and peer nominations for “gets into trouble”. Predictive validity has been shown with a near 50% increase in the odds of a diagnosis of antisocial personality disorder at age 20–21 (OR =1.49, 95% CI 1.30, 1.71) for each unit increase in the aggression subscale in 1<sup>st</sup> grade. The TOCA-R has been shown to be sensitive to relatively modest intervention changes over as long as 5–6 years.<sup>22</sup>

## Data Analysis

**Sample Attributes**—Descriptive statistics were used to characterize the distributions of the variables. TOCA subscale scores were analyzed as logarithmically transformed continuous variables because of positive skewness. Prior analyses showed that the HSP had little impact on most outcomes.<sup>11,12</sup> Therefore, for the present study, the HSP intervention group and the control group were combined in descriptive analyses.

**Association of Early Parenting with Social-Emotional Adaptation to School for At-Risk Children**—Multiple analysis of covariance (MANCOVA) was used to assess the association of each domain of early parenting as measured by the HOME subscales with each domain of social-emotional (SE) adaptation to school as measured by the TOCA. First, unadjusted measures of association were obtained via models that included no covariates. Then, MANCOVA was used to assess the association of early parenting with SE adaptation to school while controlling for covariates theorized to influence early parenting, SE adaptation to school, or both. All models included the same set of covariates. All covariates were entered as binary variables. The covariates and the reference category for each were:

child gender (female), child gestational age (full term), parity (first birth), poverty (above poverty level), maternal substance use (negative), maternal parenting stress (negative), maternal depression (negative), intimate partner violence (negative), substantiated child maltreatment (negative), and study group (control group).

Because the dependent variable was log transformed, the MANCOVA coefficients for HOME subscales, when multiplied by 100, express the percent change in the dependent variable for a one unit increase in the HOME subscale score.<sup>23</sup> The association of the HOME subscale with the TOCA measure of SE adaptation was considered to be significant if  $p < .05$ ; we considered  $p < .10$  a trend toward significance.

## RESULTS

### Family Attributes

Table 1 summarizes key attributes of the families included in the main analyses ( $n=318$ ). One-tenth of the children were premature. About 60% of mothers self-identified their sole or primary racial/ethnic affiliation as Native Hawaiian, other Pacific Islander or Asian; over a quarter reported multiple races/ethnicities but no primary affiliation. At the time the child was born, about a third of mothers were not high school graduates and about two-thirds lived in households with incomes below the poverty level. When the child was one year old, maternal parenting stress, substance use, depression and partner violence were common and HOME scores spanned the full possible range for each subscale. When the children were in first grade, their TOCA scores for shyness, concentration and rejection spanned the full possible range and scores for aggression spanned nearly the full possible range.

We compared the families included in the main analyses with all other study families for whom we had valid data. The families included in the main analyses were similar to other families on all attributes except for the child's gender. Children in the sample analyzed were more likely to be female (57% vs. 44%,  $p < .001$ ).

### Unadjusted Associations of Early Parenting with Social-Emotional Adaptation to School

Table 2 shows the unadjusted regression coefficients for TOCA subscale scores with each subscale of the HOME. Parental warmth was significantly negatively associated with teacher ratings of the child's shyness, problems of concentration, and peer rejection. Parental lack of hostility was significantly negatively associated with children's problems of concentration and peer rejection in first grade. Parental encouragement of developmental advance was significantly negatively associated with all four subscales of social-emotional adaptation to school. Parental promotion of language and literacy was significantly negatively associated with problems of concentration and there was a trend towards a significant negative association with peer rejection. Parental verbal skills were not significantly associated with any of the social-emotional adaptation subscales.

As noted earlier, because the TOCA scores were log transformed, the coefficients, when multiplied by 100, can be interpreted as representing the percent decrease in average TOCA scores associated with a one point increase on HOME subscale of interest. Thus, for example, a one point increase in parental warmth was associated with nearly a 5% decrease in children's average TOCA score before controlling for covariates.

### Adjusted Associations of Early Parenting with Social-Emotional Adaptation to School

In multivariate analyses controlling for demographic and psychosocial covariates, many of the associations of early parenting with children's social-emotional adaptation to school remained significant. Parental warmth was still associated with decreased teacher ratings of

shyness, concentration problems, and peer rejection. Parental lack of hostility maintained its significant association with lower ratings of concentration problems; however, the association with peer rejection shifted to a trend towards significance. Mothers' encouragement of developmental advance was significantly associated with lower ratings of peer rejection; and showed a trend towards lower ratings of aggression. Promotion of learning and literacy was associated with a trend towards lower ratings of concentration problems.

## DISCUSSION

In this sample of children from psychosocially at-risk families, there was notable variation in the quality of early parenting and the children's social-emotional adaptation to school in the first grade. Specific aspects of early parenting – parental warmth, lack of hostility, encouragement of developmental advance, and promotion of learning and literacy – were associated with more favorable teacher ratings of one or more domains of children's social-emotional adaptation to school in the first grade.

Overall, these findings are consistent with other studies of the relationship between parenting behavior and children's social-emotional development in both general and high risk samples. In cross-sectional analyses of data on a national sample of families with children in kindergarten, Raver, Gershoff, and Aber found that lower use of physical punishment, parental warmth, consistency, and cognitively stimulating engagement were positively associated with children's social competence.<sup>24</sup> In a multi-site experimental study the Infant Health and Development Program, an intervention of parenting-focused home visiting and center-based child care targeting low birth weight children, Linver found that observed parenting practices as measured by the HOME mediated the association between income and child behavior problems.<sup>25</sup> Many interventions, such as promoting Positive Parenting,<sup>26</sup> address child behavioral problems using parent-focused strategies to improve the quality of parent-child interaction.<sup>26,27</sup>

Our study was designed to identify associations of specific aspects of parenting behavior with specific domains of children's social-emotional well-being. Overall, the results are consistent with Conger's family stress model and Bowlby's attachment theory. Conger has proposed that the stresses arising from poverty, violence and social disorder negatively impact parents' ability to provide nurturing caregiving and that this mediates the effects of such stressors on children's adjustment. Bowlby has proposed that caregivers' support of children's exploration and protective response to their distress promotes cognitive and social development and the ability to self-regulate. Thus, if parents can provide consistent, nurturant care even in the context of adversity, they can promote their children's success in the critical transition to school.

We found that parental warmth when children were one year old was associated with lower levels of shyness, concentration problems and peer rejection as rated by teachers when the children were in first grade. These findings are consistent with attachment theory, which posits that early nurturing would promote children's feelings of self-worth, their positive regard of others, and their ability to attend to tasks. The findings are also concordant with the American Academy of Pediatrics position that effective discipline must occur "in the context of a relationship in which children feel loved and secure".<sup>28</sup>

The level of parental warmth observed at one year was not associated with teacher ratings of children's aggressive behavior in first grade. One possible reason for this relates to lower study power arising from less variability on the aggression scale than on scales for the other domains. Other possible reasons are that parental warmth was inadequate to buffer the

effects of adverse aspects of the home environment contributing to later aggressive behavior, or that parental warmth was not as prevalent in families where factors associated with aggression existed.

Maternal lack of hostility was associated with reductions in concentration problems and peer rejection when the children were in first grade. This, too, is consistent with attachment theory. Maternal lack of hostility when the children were one year old was not significantly associated with teacher ratings of children's shyness in first grade. One possible reason for this is that shyness is related not only to parenting but also to temperament. Another reason might be that children of hostile parents might withdraw from conflicts with parents but that this behavior does not generalize to interactions with peers. Maternal lack of hostility was not significantly associated with children's later aggression, although results were in the expected direction. It is possible that relatively low variability on both the hostility and aggression scales compromised study power.

Parental scores for developmental advance reflect activities the child is likely to encounter in school, such as structured play and encouragement in developing new skills. At the bivariate level of analysis, this parenting scale was significantly associated with all four domains of school adaptation; in multivariable analyses it was significantly associated with more favorable ratings of children's aggression and peer rejection. This suggests that such parenting behaviors helped prepare children for the kinds of activities they would encounter in grade school, thereby reducing social problems in the school setting. Parents report wanting information on ways to encourage their children's development and pediatricians could address this via anticipatory guidance in well child visits.<sup>29</sup> A recent study demonstrated an association between increased knowledge of infant development with more positive parent-child interactions.<sup>30</sup> We are aware of little evidence of the impact of anticipatory guidance on parenting behaviors,<sup>31</sup> but experts support improving parental knowledge about development as an important part of well child care.<sup>10</sup>

High scores on the learning and literacy scale were associated with more favorable teacher ratings of the child's ability to concentrate, but were not associated with the domains of adaptation that involved relating to others. The items in the language and literacy scale relate primarily to the provision of books and other age-appropriate toys. Thus, it is reasonable that scores on this parenting scale would be more strongly associated with the child's ability to concentrate on learning activities than on his or her relationships with others. The impact of learning and literacy materials on language development has been supported by primary care interventions such as Reach Out and Read.<sup>32</sup>

The parental verbal skills scale was not associated with any of domain of school adaptation. This is not surprising, considering that the three items in this scale relate neither to the affective quality of the parent's interaction with the child nor to activities to promote the child's cognitive development. Rather, the items reflect whether the parent's speech is audible and whether s/he converses with ease and initiates conversation with the observer.

Models of vulnerability and resilience argue for early intervention to promote positive child development by promoting positive parenting in over-burdened families. Beyond this, recent research demonstrates that vulnerability can be heightened through adaptations of the developing brain in response to deprivation or trauma in early life, resulting in a lasting vulnerability to stress.<sup>6</sup> This further underscores the importance of the pediatrician's role in influencing caregiving behavior. Yet, there is much evidence that all humans, young and old alike, have the capacity for change.<sup>1</sup> Thus, while it is ideal to promote positive parenting from the start, pediatric providers can and should continue to monitor parenting and child development beyond the first few years of life.



Strengths of our study include its prospective cohort design and use of multiple sources and methods of data collection. We assessed outcomes six years after baseline data collection. In addition, we directly observed early parenting in the home at age one using a measure with good psychometric properties. This is a strength as parents may be inaccurate reporters of their own parent-child interactions.<sup>33</sup> Likewise, the study results are strengthened by having more than a single source of data; we used teacher ratings of children's adaptation to school in first grade. Parents may place higher emphasis on attributes and behaviors of their children that they believe are related to academic achievement, while kindergarten and first grade teachers put more emphasis on the child's social and emotional readiness for school.

There are important methodologic issues to consider when interpreting results. The sample was limited to children from families assessed positive for risk of child maltreatment. Thus, the findings should not be generalized to families overall. Furthermore, the study was limited to families in Hawaii, which limits the generalizability to other geographic settings and cultures. There was attrition in the sample due to challenges of conducting data collection at schools. Although the families included in the analysis did not differ from those excluded except for child gender, it is possible that the subsample analyzed was biased in ways that we did not measure.

## CONCLUSIONS

The findings from this study point to the importance of early positive parenting skills, specifically parental warmth, lack of hostility, encouragement of developmental advance, and learning and literacy materials for at-risk children's social-emotional adaptation to school. Pediatric primary care providers are in a unique position to promote positive parenting.<sup>31</sup> In addition, a recent technical report by the American Academy of Pediatrics emphasized the importance of aligning well-child care goals with school-readiness goals.<sup>34</sup> Improving parental knowledge about positive parenting via anticipatory guidance should be a focus of well child visits and can impact children's school readiness. Furthermore, interventions such as Healthy Steps<sup>36</sup> or on-site parent coaching<sup>32</sup> can be established in the Medical Home to build parenting skills. Interventions to enhance parent encouragement of development, strengthen parents' use of appropriate learning and literacy materials, and improve the quality of parent-child interaction can be key in promoting positive social-emotional development and a successful transition to school. Medical Home interventions should be evaluated for their short and long term impact on children's school readiness.

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## List of Abbreviations

<b>CPS</b>	Child Protective Services
<b>HOME</b>	Home Observation for Measurement of the Environment
<b>HSP</b>	Healthy Start Program

## TOCA-R Teacher Observation of Child Adaptation-Revised

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Table 1

## Sample Attributes\*

At-Risk Families (N = 318)	
<b>Demographic Attributes</b> <sup>1</sup>	n (%)
<u>Child</u>	
Child gender (% girl)	180 (57)
Premature birth (GA, 37weeks)	31 (10)
<u>Mother/Family</u>	
Maternal age, mean ± SD, years	23.7 ± 5.7
Mother <20 years old	95 (30)
Mother's primary ethnicity	
Native Hawaiian or Pacific Islander	112 (35)
Asian	79 (25)
Caucasian	37 (12)
No primary ethnicity or unknown	90 (28)
Index child is first birth	136 (43)
Parents' relationship	
None	32 (10)
Friends or going together	108 (34)
Living together	95 (30)
Married	83 (26)
Mother non-high school graduate	100 (31)
Household income below poverty level	196 (62)
<b>Psychosocial Attributes</b> <sup>2</sup>	
Maternal parenting stress	71 (23)
Maternal substance use	51 (16)
Maternal depression	151 (48)
Intimate partner violence	125 (40)
<b>Early Parenting</b> <sup>2</sup>	
Parental Warmth, mean ± SD	5.7 ± 1.4
Parental Lack of Hostility, mean ± SD	4.3 ± 1.2
Developmental Advance, mean ± SD	2.5 ± 1.6
Learning/Literacy, mean ± SD	7.3 ± 2.3
Parental Verbal Skills, mean ± SD	2.7 ± 0.7
<b>Social Emotional Adaptation to School</b> <sup>3</sup>	
Shyness, mean ± SD	8.8 ± 4.1
Aggression, mean ± SD	9.7 ± 4.7
Poor Concentration, mean ± SD	18.7 ± 8.3
Peer Rejection, mean ± SD	7.1 ± 3.2

\* Reported as n (%) of total sample) or sample mean ± standard deviation

<sup>1</sup> Measured at baseline unless otherwise specified

<sup>2</sup>Measured at year 1 follow-up by the HOME (Home Observation for Measurement of the Environment) scale

<sup>3</sup>Measured during first grade by the TOCA (Teacher Observation of Classroom Adaptation)

Associations between Early Parenting as measured by HOME scales and Social-Emotional Adaptation to School as measured by teacher ratings on the TOCA-R (n=318)

Table 2

	Unadjusted <sup>f</sup>			Adjusted <sup>2</sup>		
	B <sup>f</sup>	95% CI	p	B <sup>2</sup>	95% CI	p
<b>Parental Warmth</b>						
Shyness	-.047	-.084, -.011	.01	-.041	-.081, -.001	.04
Aggression	-.014	-.046, .018	.40	-.020	-.055, .004	.25
Poor Concentration	-.059	-.098, -.020	<.01	-.049	-.091, -.007	.02
Peer Rejection	-.050	-.088, -.012	.01	-.043	-.084, -.001	.04
<b>Parental Lack of Hostility</b>						
Shyness	-.015	-.061, .031	.51	-.012	-.059, .034	.60
Aggression	-.028	-.068, .012	.17	-.031	-.072, .009	.12
Poor Concentration	-.055	-.104, -.006	.03	-.051	-.100, -.002	.04
Peer Rejection	-.051	-.098, -.003	.04	-.040	-.088, .008	.10
<b>Developmental Advance</b>						
Shyness	-.041	-.074, -.008	.02	-.026	-.061, .009	.14
Aggression	-.030	-.059, -.001	.04	-.028	-.058, .002	.07
Poor Concentration	-.043	-.079, -.007	.02	-.029	-.066, .008	.13
Peer Rejection	-.054	-.089, -.020	<.01	-.041	-.077, -.005	.02
<b>Learning/Literacy</b>						
Shyness	-.011	-.034, .013	.37	.005	-.020, .030	.70
Aggression	-.014	-.034, .006	.18	-.011	-.033, .011	.32
Poor Concentration	-.035	-.060, -.010	.01	-.024	-.051, .002	.07
Peer Rejection	-.022	-.046, .002	.07	-.012	-.037, .014	.38
<b>Parental Verbal Skills</b>						
Shyness	-.029	-.106, .047	.46	.002	-.077, .082	.95
Aggression	.004	-.062, .071	.90	.013	-.056, .081	.71
Poor Concentration	-.010	-.093, .072	.80	.021	-.063, .105	.62
Peer Rejection	-.014	-.094, .065	.72	.017	-.065, .099	.68

<sup>f</sup> Results from MANCOVA analyses, unadjusted.

<sup>2</sup> Results from MANCOVA analyses adjusted for the same set of ten covariates, all of which were coded as binary variables. The reference value for each of these ten binary covariates is given in parentheses, as follows: child gender (female), child gestational age (full term), parity (first birth), poverty (above poverty level), maternal parenting stress (negative), maternal depressive symptoms (negative), maternal substance use (negative) intimate partner violence (negative), substantiated child maltreatment (negative), and study group (control group).