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Low-Income Parents’ Warmth and Parent–Child Activities for Children with Disabilities, Suspected Delays and Biological Risks

Elaine M. Eshbaugh
Iowa State University

Carla A. Peterson
Iowa State University, carlapet@iastate.edu

Shavaun Wall
The Catholic University of America

Judith J. Carta
University of Kansas Main Campus

Gayle Joanne Luze
Iowa State University, gluze@iastate.edu

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Abstract
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Keywords
disabilities, parent–child relations, child health, parental warmth

Disciplines
Family, Life Course, and Society | Special Education and Teaching

Comments

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Authors
Elaine M. Eshbaugh, Carla A. Peterson, Shavaun Wall, Judith J. Carta, Gayle Joanne Luze, Mark Swanson, and Hyun-Joo Jeon
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Warm and responsive parenting is optimal for child development, but this style of parenting may be difficult for some parents to achieve. This study examines how parents’ observed warmth and their reported frequency of parent–child activities were related to children’s classifications as having biological risks or a range of disability indicators. Children were low-income prekindergarteners who participated in the Early Head Start Research and Evaluation Project Longitudinal Follow-up. Data from parent, early care and education staff reports, and direct child assessments were used to classify children into the following groups: disabilities, suspected delays, biological risks, disabilities and biological risk, suspected delays and biological risk, and no disability indicator. Socio-economic status (ethnicity, maternal education and poverty level) and maternal depression were controlled in the analyses. The parents of children with disabilities and suspected delays evidenced significantly lower levels of warmth and less frequent parent–child activities compared with other parents. The parents of children with biological risk factors who did not also have disabilities or suspected delays did not exhibit decreased warmth and less frequent parent–child activities. Copyright © 2010 John Wiley & Sons, Ltd.

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*Correspondence to: Elaine M. Eshbaugh, University of Northern Iowa, Cedar Falls, IA, USA. E-mail: elaine.eshbaugh@uni.edu

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Parenting that is warm and responsive to children’s developmental needs promotes more positive outcomes for children cognitively, socially and linguistically (Landry, Smith, Miller-Loncar, & Swank, 1997, 1998; Landry, Smith, Swank, & Miller-Loncar, 2000; Masur, Flynn, & Eichorst, 2005; Parpal & Maccoby, 1985; Smith, Landry, & Swank, 2009). Responsive parents provide appropriate materials and home environments to enhance development (Bradley & Corwyn, 2004). Responsive parenting uses scaffolding (Vygotsky, 1978) and non-intrusive reciprocity (Guralnick, 2005). Vygotsky suggests that adult responsivity is critical for the optimal development of children’s future autonomy. Children learn to solve problems and develop independence as parents apply joint problem-solving. Responsive parents also follows children’s interests in providing a positive early learning environment (Landry et al., 2000). Responsive parenting motivates and builds children’s confidence because children learn that their parents respond to their needs (MacDonald, 1992). Because of the rapid changes during the early years of life, parents may need to frequently change their behaviours in order to match their child’s development and maintain responsive, warm parenting. Maintenance of this parenting style may be more difficult for some parents to achieve than others.

Not surprisingly, parents exhibit variability in levels of warm, responsive caregiving. Belsky (1984) defines several parenting determinants, such as child characteristics and contextual factors, that influence parenting behaviours. Because parenting is a reciprocal process, child characteristics may influence the level of warm, sensitive parenting demonstrated (Bell, 1968). Researchers have called for the inclusion of children at risk of skill development difficulties in studies on parenting (Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001; Hauser-Cram et al., 1999; Smith, Landry, & Swank, 2000). Children who have special needs or risks may be more challenging to parents because many parents are unable to match their parenting to the child’s developmental level and provide optimal parenting (Guralnick, 1998). Parents may also be challenged in integrating these children into family patterns and daily routines. However, some researchers (Smith et al., 2009) suggest that children with biological risk factors have mothers who provide comparable parenting to the mothers of typical children.

Despite the challenges of providing optimal parenting to children with special needs, researchers suggest that positive and effective parenting strategies may be even more important for children with special needs or biological risks as compared with typically developing children (Landry et al., 1998; Smith et al., 2000). Psychologists suggest that effective parenting provides a buffer against developmental problems for at-risk children (Belsky, 1984; Scarr, 1992). For instance, children who were born preterm and classified as very low birth weight and high risk showed increased developmental gains when compared with other children when mothers showed appropriate responses in parenting (Landry et al., 1998). Furthermore, parents’ verbal scaffolding predicts non-verbal reasoning skills in 5-year-old children born preterm and at biological risk, a group that develops reasoning skills more slowly than typically developing children (Smith et al., 2000). Significantly, the parents’ verbal scaffolding predicts growth in non-verbal reasoning skills among at-risk children more strongly than among full-term children (Smith et al., 2000).

Positive parenting strategies are not always predictive of greater growth in children with multiple risks. Higher levels and faster rates of growth were found in response to positive parenting of typically developing children compared with the growth of children with spina bifida when those same high-quality parenting
strategies were applied (Lomax-Bream et al., 2007). Yet, responsive parenting was related to faster growth in cognition and language among both groups. It appears that Landry, Smith, Swank, Assel, and Vellet’s (2001) research on children with spina bifida has somewhat different findings than research on other medically at-risk groups. This indicates that parenting influences children’s development differently depending on severities and types of children’s special needs and developmental risks.

Obviously, not all parents are equally responsive to their child’s needs. Another important contributor to variability in responsivity is parent characteristics. Certain demographic characteristics may predict greater sensitivity in parenting. For instance, education may be related to more sensitive parenting because mothers with more education better understand the constellation of factors that influence child development (Hess & Shipman, 1965). Other researchers have suggested that higher socioeconomic status predicts the likelihood a mother will show warm responsiveness in parenting (Smith et al., 2009; Taylor, Anthony, Aghara, Smith, & Landry, 2008). Furthermore, higher socioeconomic status is related to more responsive parenting at multiple age points throughout early childhood (Smith et al., 2009). In Smith’s study, mothers with lower levels of economic appeared to have greater difficulty in developing nurturing bonds with their young children than those with more economic and social support.

Variability in responsivity and warmth may also be due, in part, to a parent’s mental health. Sensitive, responsive parenting appears to decrease as parental depression increases (Cummings & Davies, 1994; Dix, Gershoff, Meunier, & Miller, 2004). Results suggest that symptoms of depression among parents may lead to lack of concern for the child’s needs and feelings and heightened concern for one’s own needs (Dix et al., 2004). Depressive symptoms may also make mothers less responsive by limiting the amount of effort they put into interacting with their child (Atkinson et al., 1995). Authors propose that a primary mechanism for the link between depression and poor parenting may lie in parents’ inability to regulate their emotions (Cummings & Davies, 1994). Depressed parents may experience significant negative emotions (including sadness and anger) while interacting with their children, and these negative emotions create environments in which responding to a child’s needs is challenging. Because of the important link between parental depression and parent–child interaction, it is important to acknowledge the role of depression when exploring disabilities and responsive parenting.

Although research on parenting styles among parents of children with special needs is not plentiful, the research that exists suggests that disability may be an important factor in predicting responsiveness among parents. Previous research also posits that low-income parents are particularly at risk of providing less warm and responsive parenting (Smith et al., 2009; Taylor et al., 2008). Therefore, it is necessary to add to the literature by exploring the parent–child relationships of low-income children with disabilities and delays. Because previous research (Peterson et al., 2004) suggests that disabilities are under-identified in early childhood among children who live in poverty, it is important to look not only at children who have identified disabilities but also at children who have developmental needs or suspected developmental delays that may impact parenting.

The purpose of this study was to compare the levels of responsive parenting, specifically parental warmth and frequency of parent–child activities, by child disability indicators while controlling for family demographic factors and also maternal depression in a low-income sample. This is an especially relevant population for investigation because children in poverty are a tremendous risk
for less than optimal developmental outcomes (Korenman, Miller, & Sjaastad, 1995). Our preliminary research question was: Are there differences in family demographic factors and maternal depression among families with typically developing children compared to those with disabilities, developmental delays, and/or biological risk? Our primary research question was: Did low-income parents of typically developing children demonstrate more warmth and higher frequencies of parent–child activities compared to low-income parents of children with disabilities, developmental delays, and/or biological risks?

METHOD

Early Head Start Research and Evaluation Project Longitudinal Follow-up Study

The Early Head Start Research and Evaluation Project (EHSREP) is an ongoing longitudinal cross-site study of 3001 low-income families who applied, between July 1996 and September 1998, to receive Early Head Start services. Seventeen Early Head Start programs in the United States were selected to represent major approaches to programming, to reach geographic distribution, and to achieve the diversity typical of Early Head Start families. Families at these sites were randomly assigned by the national contractor, Mathematica Policy Research, to be enrolled in an Early Head Start program or to a control group in which participants could receive typical community services (excluding Early Head Start) until the focus child’s third birthday (Administration for Children and Families (ACF), 2002). Families were eligible to participate in this program if their incomes were at or below the federal poverty guideline and were expecting a child or had a child below 1 year old. At the time of enrolment, 36% of families were receiving Temporary Assistance to Needy Families (Administration for Children and Families, 2002). Data were gathered by trained collectors affiliated with each site who were extensively trained and certified for accuracy and reliability.

The prekindergarten follow-up study of the EHSREP was designed to follow experimental and control families from the time the child turned 3 years old until the summer before kindergarten entry. Three types of data were collected. First, each family participated in tracking interviews by telephone at 6-month intervals. Interviewers collected data on children’s enrolment in current and former early care and education programs, parent education and parent employment. Second, assessments were conducted during the spring or summer before the child entered kindergarten. These assessments included parent interviews, direct child assessments and observations of videotaped parent–child interaction. Third, early care and education staff interviews and classroom observations were conducted during the spring or summer before children’s kindergarten entry. Across all 17 sites, some prekindergarten data were obtained for 78% (n = 2329) of the original sample of 3001. At this phase of the study, data collectors were once again trained and certified for accuracy and reliability.

Description of Participants in This Analysis

Participants in this study were 1859 families whose child was in the initial sample of the EHSREP. The mother was the primary respondent in these families. Although 2329 families provided some prekindergarten data, only 1859 of these families (80%) completed all the measures necessary for inclusion in these
analyses. At the prekindergarten parent interview and child assessment, children had a mean age of 5.22 years (S.D. = 0.33). Of the children, 948 (51%) were male. Regarding child ethnicity, 731 (39%) were White, 572 (32%) were African-American and 329 (18%) were Hispanic. The remainder (n = 227, 11%) were identified as another ethnicity. About 23% (n = 431) of families spoke a primary language other than English in the home. About 29% (n = 533) of respondents had less than a high school education, whereas the majority (n = 1239; 66%) had either a high school diploma or GED. About 5% (n = 89) had education beyond high school. The mean monthly income for families at prekindergarten data collection was $1746, and monthly income for 20% of families was less than $1000. Federal poverty level is an index calculated according to income and family size and adjusted on an annual basis. According to federal poverty level measures, almost half of families (n = 903; 49%) were identified as living in poverty at all data collection points in the EHSREP.

**Description of Disability Groups**

Data from parent, early care and education staff reports, and direct child assessment were used to identify children who had disabilities, suspected delays and biological risk factors (Figure 1). The categories were developed using available variables that are known to be associated with disabilities or developmental delays. During the tracking interviews conducted every 6 months by phone, parents were asked questions regarding indicators that their children may have a disability and questions about need for and use of health and disability services. In addition, during the in-home interviews, parents completed the Child Behavior Checklist—Parent Report (CBCL-PR; Achenbach, Edelbrock, & Howell, 1987) to describe their children’s social development and behaviour. Early care and education providers were asked about whether children enrolled in their programs were eligible for and/or had received Part B Early Childhood Special Education services and also completed the Child Behavior Checklist—Teacher Report (CBCL-TR; Achenbach & Edelbrock, 1983) and the Social Skills Report System (SSRS;...
Gresham & Elliott, 1990) on target children. Children were recorded as receiving Part B services if either a parent or early care and education provider reported at any time point that the child had received Part B services. Also, each child’s developmental status was assessed during the in-home interviews. Trained and certified reliable assessors administered the Peabody Picture Vocabulary Test—3rd Edition (PPVT-III; Dunn & Dunn, 1997) or the PPVT Spanish version, Test de Vocabulario en Imágenes Peabody (TVIP; Dunn, Padilla, Lugo, & Dunn, 1986). Six exclusive disability groups were established as defined below:

**Children with disabilities** (*n* = 211; 11%): This group included children who were reported to have received Part B Early Childhood Special Education services at any point but were not identified as having a biological risk. Parents were asked if their child had received Part B services during Tracking Interviews and during the family and child assessment before kindergarten entry. If the child was enrolled in a preschool program, the director was asked to indicate if the child received Part B services. If *any* of these responses indicated a child has received Part B services, the child was classified as having an identified delay.

**Children with suspected delays** (*n* = 380; 20%): This group included children who were identified as having developmental or behavioural concerns by a parent or teacher but were not reported as having received Part B services and were also not identified as having a biological risk. Children were included in this group if they received a low score (a standard score below 77 or 1.5 standard deviations below the mean) on the PPVT-III or TVIP, or if their parent or teacher reported they had a behavioural or social problem that interfered with learning on the CBCL (Achenbach et al., 1987), completed by both parents and teachers, or the SSRS (Gresham & Elliott, 1990). In addition, children were categorized as having a suspected delay if the parent reported that their child had difficulty with communication, vision, hearing, using arms/hands, using legs/feet or used equipment for mobility. It should be noted that most children in this category had more than one data marker for a suspected delay. About 40% of the children in this category scored below 77 on the PPVT. More than 25% of children with a suspected delay were reported by a parent to have problems with aggressive behaviour, and nearly 30% were reported by a parent to be hyperactive.

**Children with biological risks** (*n* = 289; 16%): The group included children whose parents reported that they had a chronic health condition, such as epilepsy, diabetes, anaemia, asthma or heart disease. This category is conceptually based on the ‘biological risk’ category in Part C of the IDEA. This category was conceptualized because the continued presence of these risks may interfere with a child’s opportunities for learning and socialization. For example, if a child has asthma, he/she may be less likely to attend child care programs and be engaged in these programs when present. Therefore, their opportunities for optimal development may be limited. A child was also classified as having biological risks if the parent indicated that the child was in ‘fair’ or ‘poor’ health, had been on a prescribed medication for more than 30 days or had experienced a serious illness since birth. It should be noted that health conditions in this category involve various body systems but exclude the brain and nervous system.

**Children who have disabilities and biological risks** (*n* = 163; 9%): Children in this group had received Part B services and had also been identified as having a biological risk. Because groups are mutually exclusive, children included in this group were not included in the groups above.

**Children who have suspected delays and biological risks** (*n* = 186; 10%): Children in this group had been identified as having both a suspected delay and a biological risk but were reported as not having received Part B services. Again, because the
groups are mutually exclusive, children in this category were not counted in the above categories.

Children with no disability indicators (n = 630; 34%): This group included children who had not received Part B services, had not been identified as having a suspected delay and had no known biological risk factors.

Measures

Maternal depression
Depressive symptoms of mothers were assessed using a 12-item shortened form of the Center for Epidemiologic Studies Depression Scale (CES-D; Ross, Mirowsky, & Huber, 1983). This measure was used in the Family and Child Experiences Survey (FACES) study as well (ACF, 2002). Participants were asked how often during the past week they felt or behaved a certain way. Responses range from 0 = ‘rarely or none of the time’, to 3 = ‘most or all of the time’. Items include examples of depressive symptoms: ‘Your sleep was restless’, and ‘You felt lonely’. Scores can range from 0 to 36. A cut-off score of 10 may be used to identify individuals with non-negligible depressive symptoms. This score is proportionally scaled to the standard cut-off score of 16 from the 20-item CES-D. Cronbach’s alpha in the present study was 0.88.

Parental warmth
An abbreviated version of the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984) scale for 3- to 6-year olds, similar to the measure used in the National Longitudinal Survey of Youth (NLSY; Center for Human Resources Research, 2005), was used in the prekindergarten assessment. Although the measure included four subscales, only the Warmth scale was used in the present study. Example items include: ‘Caregiver answers child’s questions or requests verbally’ and ‘Caregiver usually responds verbally to child’s talking’. Assessors observe parents and children and respond dichotomously to items. Scores range from 0 to 6. Extensive reliability and validity data have been reported for the HOME and interobserver agreement typically exceeds 90% (Bradley 1994; Bradley, Corwyn, & Whiteside-Mansell, 1996).

Parent–child activities
An 8-item measure of frequency of parent–child activities was employed in the prekindergarten parent interview battery. Participants were asked how many times in the previous week they or someone in their family had participated in certain activities with the target child. Possible responses were 1 = ‘zero times’, 2 = ‘one or two times’ and 3 = ‘three or more times’. Examples of items are ‘told him/her a story’, ‘played with toys or games indoors’ and ‘involved him/her in household chores like cooking, cleaning, setting the table, or caring for pets’. Possible scores ranged from 8 to 24. Because this measure is an index, no Cronbach’s alpha was computed.

RESULTS

First, we will present descriptive statistics and zero-order correlations for the variables in our analyses. Then, we will proceed to answer our preliminary research questions before exploring our primary research question. Descriptive
statistics revealed that the mean for warmth was 4.26 (S.D. = 1.45, range = 0–6). For parent–child activities, scores ranged from 8 to 24 with a mean of 19.10 (S.D. = 2.95). On this variable, 5% of the mothers had a score of 24, whereas only 10 mothers (<1%) had a score of 10 or below. The mean for depression was 8.08 (S.D. = 7.16, range = 0–36) and 35% of mothers were identified as having non-negligible depressive symptoms (>10). Depression was negatively correlated with warmth, \( r (1859) = -0.13, p < 0.001 \), but the correlation between depression and parent–child activities was not significant, \( r (1859) = -0.03, p = 0.28 \). Warmth and parent–child activities were positively related, \( r (1859) = 0.12, p < 0.001 \).

To explore our preliminary research questions, one-way ANOVAs were performed to determine whether or not living below the federal poverty guideline, ethnic minority status, maternal education (1 = less than high school/GED; 2 = high school diploma/GED; 3 = any postsecondary education) and maternal depression had statistically significant relations with membership in one of the disability groups (see Table 1). Results suggested that, in general, these variables were related to disability group. More specifically, children with no disability indicator were less likely to be living in poverty (41%) than all other groups except for children with biological risks only. Ethnic minority status differed by disability group. Children with a suspected delay (but no biological risk) were most likely to be identified as ethnic minorities (71%), whereas children with disabilities and biological risks were least likely to be identified as ethnic minorities (50%). In addition, maternal education (measured on a scale of 1–3) significantly differed by disability group. Mothers of children with suspected delays only had the lowest levels of education (\( M = 1.62 \)), and mothers of children with biological risks only (\( M = 1.87 \)) and no indicators (\( M = 1.83 \)) had the highest levels of education. Maternal depression levels differed by disability group. In fact, mothers of children with no indicators (\( M = 6.54 \)) had significantly lower levels of depression than all other disability groups. Mothers showing the highest levels of depression were mothers of children with disabilities and biological risks (\( M = 9.85 \)) and children with suspected delays and biological risks (\( M = 9.95 \)). Because disability groups differed in factors shown in Table 1, these variables were included as covariates when exploring the main research question. Program group (EHS versus control) was not related to disability group and was excluded from further analysis.

Next, we investigated our main research question. In order to test the differences in warmth and parent–child activities among disability group while controlling for poverty, ethnic minority status, maternal education and maternal depression, disability group was entered in an ANOVA with the demographic and background variables as covariates. Warmth and parent–child activities were outcome variables in separate analyses. For warmth, 7% of the variance was explained by this model (see Table 2). Results suggest that respondents living in poverty and respondents indicating higher levels of depressive symptoms demonstrated lower levels of warmth. In addition, while controlling for demographic characteristics and respondent depression, disability group was a significant predictor of warmth. Post hoc analysis (see Table 3) suggests that children with no disability indicators (\( M = 4.39 \)) had mothers who showed significantly higher levels of warmth than children with disabilities (\( M = 4.13 \)), suspected delays (\( M = 4.08 \)) and disabilities and biological risks (\( M = 4.16 \)). Interestingly, children with biological risks only (\( M = 4.46 \)) had mothers with slightly (not significantly) higher warmth scores than children with no indicators. The biological risks only group did have significantly higher warmth scores than the disabilities group, suspected delay group, disability and biological risk group, and suspected delay and biological risks groups.
Table 1. Demographic variables and parental depression by disability group (N = 1859)

<table>
<thead>
<tr>
<th>Group Description</th>
<th>1. Disability (n = 211)</th>
<th>2. Suspected delay (n = 380)</th>
<th>3. Biological risks (n = 289)</th>
<th>4. Disability and biological risks (n = 163)</th>
<th>5. Suspected delay and biological risks (n = 186)</th>
<th>6. No indicator (n = 630)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Living below fed poverty line at all points</td>
<td>59&lt;sup&gt;3,6&lt;/sup&gt;</td>
<td>52&lt;sup&gt;4,6&lt;/sup&gt;</td>
<td>44&lt;sup&gt;1,2,4,5&lt;/sup&gt;</td>
<td>55&lt;sup&gt;3,6&lt;/sup&gt;</td>
<td>57&lt;sup&gt;3,6&lt;/sup&gt;</td>
<td>41&lt;sup&gt;1,2,4,5&lt;/sup&gt;</td>
</tr>
<tr>
<td>% Ethnic minority</td>
<td>58&lt;sup&gt;2&lt;/sup&gt;</td>
<td>71&lt;sup&gt;1,3,4,6&lt;/sup&gt;</td>
<td>64&lt;sup&gt;2,4&lt;/sup&gt;</td>
<td>50&lt;sup&gt;2,3,5&lt;/sup&gt;</td>
<td>65&lt;sup&gt;4&lt;/sup&gt;</td>
<td>64&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mean respondent education</td>
<td>1.75&lt;sup&gt;2,3&lt;/sup&gt;</td>
<td>1.62&lt;sup&gt;1,3,4&lt;/sup&gt;</td>
<td>1.87&lt;sup&gt;1,2,4,5&lt;/sup&gt;</td>
<td>1.72&lt;sup&gt;2,3,6&lt;/sup&gt;</td>
<td>1.69&lt;sup&gt;3,6&lt;/sup&gt;</td>
<td>1.83&lt;sup&gt;2,4,5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mean respondent depression</td>
<td>8.20&lt;sup&gt;1,5,6&lt;/sup&gt;</td>
<td>8.88&lt;sup&gt;3,6&lt;/sup&gt;</td>
<td>7.94&lt;sup&gt;2,4,5,6&lt;/sup&gt;</td>
<td>9.85&lt;sup&gt;1,3,6&lt;/sup&gt;</td>
<td>9.95&lt;sup&gt;1,3,6&lt;/sup&gt;</td>
<td>6.54&lt;sup&gt;1,2,3,4,5&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Superscript numbers denote significant difference (p<0.05) with corresponding numbered group.
Furthermore, the disability group did not differ from the suspected delay group, and the disability and biological risk group did not differ from the suspected delay and biological risk group. This indicates that, while controlling for demographic factors and depression, mothers of children with identified and suspected delays receive similar levels of warm parenting.

For parent–child activities, 6% of the variance was explained by the ANOVA model (see Table 4). Respondents living in poverty and identified as ethnic minorities had lower levels of parent–child activities than other respondents, and those indicating higher levels of respondent education had higher levels of parent–child activity than other respondents. In this model, depression was not significantly

| Table 2. Analysis of variance for parental warmth |
| Source | df | F | p-Value |
| Disability group | 5 | 3.09 | 0.00 |
| Poverty | 1 | 12.01 | 0.00 |
| Ethnic minority | 1 | 0.05 | 0.81 |
| Education | 1 | 0.91 | 0.34 |
| Depression | 1 | 10.38 | 0.00 |
| Error | 1849 | | |
| Total | 1859 | | |
| Corrected total | 1858 | | |

R² = 0.07.

| Table 3. Marginal means of parental warmth and parent–child activities by disability group while controlling for demographic factors (N = 1859) |
| 1. Disability (n = 211) | 2. Suspected delay (n = 380) | 3. Biological risks (n = 289) | 4. Identified delay and biological risks (n = 163) | 5. Suspected delay and biological risks (n = 186) | 6. No indicator (n = 630) |
| Warmth | 4.13 | 4.08 | 4.46 | 4.16 | 4.20 | 4.39 |

Superscript numbers denote significant difference (p < 0.05) with the corresponding numbered group.

| Table 4. Analysis of variance for parent–child activities |
| Source | df | F | p-Value |
| Disability group | 5 | 5.49 | 0.00 |
| Poverty | 1 | 3.69 | 0.05 |
| Ethnic minority | 1 | 4.61 | 0.03 |
| Education | 1 | 17.96 | 0.00 |
| Depression | 1 | 3.32 | 0.53 |
| Error | 1849 | | |
| Total | 1859 | | |
| Corrected total | 1858 | | |

R² = 0.06.

Furthermore, the disability group did not differ from the suspected delay group, and the disability and biological risk group did not differ from the suspected delay and biological risk group. This indicates that, while controlling for demographic factors and depression, mothers of children with identified and suspected delays receive similar levels of warm parenting.

For parent–child activities, 6% of the variance was explained by the ANOVA model (see Table 4). Respondents living in poverty and identified as ethnic minorities had lower levels of parent–child activities than other respondents, and those indicating higher levels of respondent education had higher levels of parent–child activity than other respondents. In this model, depression was not significantly
related to parent–child activities. Marginal means showed that children with suspected delays only ($M = 18.43$) had significantly lower levels of parent–child activity than all other disability groups while controlling for demographic factors and depression. Also, the suspected delay and biological risk group ($M = 19.45$) had a significantly higher mean than both the identified delay ($M = 19.10$) and the identified delay and biological risk ($M = 19.15$; see Table 3) groups.

**DISCUSSION**

It has been suggested that children with special needs may be less likely than their typically developing age mates to receive responsive parenting (Guralnick, 2005). Our research supports this theory partially. In general, children with disabilities and suspected delays appear to receive less responsive parenting when compared with children without disability indicators. Children with disabilities and children with suspected delays had mothers who showed significantly less warmth than the parents of typically developing children. For parent–child activities, both the disability and the suspected delay groups had engaged in parent–child activities less frequently than the no indicators group; however, the difference for the identified delay and no indicators groups was not significant. It does seem that these types of delays are related to less than optimal parenting.

The parent–child relationship is certainly a bi-directional one with influences from both members of the dyad. Perhaps, the differences in the parent–child relationship stem, at least in part, from the child’s behaviour. Parents may be struggling to respond appropriately to their child’s developmental level when children display signs of delay (McCollum & Hemmeter, 1997). In some cases, parents may be uncertain as to how to integrate their child into family patterns and may be unable to interpret cues and signals from their child. This may result in parenting that does not meet a child’s needs and places the child’s development at further risk. On the other hand, parents’ behaviour may be impacted by their perception of the child’s capabilities. Some researchers (Rodenburg, Meijer, Dekovic, & Aldenkamp, 2007) do suggest that, for children with chronic health conditions, a parent’s perception of their child’s functional status plays a role in lack of supportive parenting. Furthermore, mothers of children with developmental delays, such as Down syndrome, may be more directive and dominant in interactions with their child (Mahoney, Fors, & Wood, 1990; Tannock, 1988). Mothers of children with intellectual disabilities may perceive their child as less capable and feel it necessary to control interactions. This compromises the interactive nature of responsive parenting and has been linked to compromised development among children at risk (Moore, Saylor, & Boyce, 1998). Also, if a parent questions a child’s capabilities, the child may be less likely to take part in routine activities, such as those included in the parent–child activities scale.

Interestingly, there was a significant difference for children with suspected delays and children with disabilities on parent–child activities. Children with an identified, rather than a suspected, delay showed higher levels of engagement in parent–child activities. Although one would expect that suspected delays are less severe than disabilities and would not impact parenting as significantly, this was not the case. The distinguishing factor between the two groups is the receipt of early intervention services for those with disabilities. Perhaps parents whose children are receiving services for those delays have learned skills to improve their parenting. Alternately, the children who have received services may be more able to express their needs to their parents, thus allowing parents to be
more responsive to their needs. The identification process for children with disabilities and suspected delays should also be considered. Perhaps, the actual delays of the two groups are similar, but children who are classified as having suspected delays have not been recognized as needing services and thus are not served appropriately. Families who face sociodemographic risks (such as low parent education and minority status) may be less likely to receive early intervention for children when it could be useful (Peterson et al., 2004).

Furthermore, one may assume that suspected delays should be perceived as ‘less severe’ than disabilities, but perhaps a closer look at the children in the suspected delays category is warranted. According to parent report, more than 25% of children with a suspected delay had problems with aggressive behaviour, and nearly 30% had problems with hyperactivity. These types of issues likely do impact parenting and may impact parenting even more when the difficulties do not qualify the children for services and could be perceived as under the child’s control.

The picture may be different for children with biological risk factors when compared with children with delays. Although not statistically significant, mothers of children with biological risks showed warmer parenting and engaged their children in more parent–child activities when compared with children without disability indicators. This corroborates previous research (Smith et al., 2009) that suggests that children with biological risks may not receive less optimal parenting than other children. Perhaps even more interesting are the findings regarding children who have both a disability or suspected delay and a biological risk. Although one might assume that these children would have less than optimal parenting than all other groups because of their cumulative risk, this was not the case. Regarding warmth, the addition of a biological risk for children with either a disability or suspected delay had virtually no effect. The same was true for children with an identified delay for parent–child activities. However, children with a suspected delay and a biological risk were engaged in more frequent parent–child activities than children with a suspected delay only. In this case, it appears that the addition of a biological risk factor results in more attention to the child than if the children had only a suspected delay.

Although both delays and biological risk may create stressors for parents and families, it is important to distinguish these populations. Biological risks, according to this research, are not related to less responsive parenting. Biological risks may result in frequent trips to healthcare providers. Therefore, health issues may result in ‘more eyes on the child’. Contact with the healthcare system may make parents more aware of their child’s needs.

From these data, it seems that children with disabilities and suspected delays may have parents who provide less than optimal parenting. For children already facing developmental obstacles, lack of responsive parenting may be devastating. One could also argue, of course, that less than optimal parenting may result in developmental difficulties. However, this study cannot present evidence that the developmental obstacles presented before the less than optimal parenting practices.

Although children who have already been identified as having a delay are receiving services, children with suspected delays may be just as much at risk for receiving less than optimally responsive parenting. Unfortunately, it may be harder to locate and target these families, and the importance of recognizing the needs families who have children with suspected delays but not disabilities should be stressed. Over 30% of children in this low-income sample had a suspected delay (with or without an additional biological risk). The implication is that professionals should continue to strive to be comprehensive in locating and targeting families who would benefit from a variety of family support and/or child development services.
A suggestion that may follow from these findings is that those families who have children with identified and suspected delays, rather than those families who have children with biological risks, may be most in need of parenting intervention. Researchers have documented the effectiveness of interventions to increase warm, responsive parenting among young children who high risk as well as children who are typically developing (Juffer, Hoksbergen, Riksen-Walraven, & Kohnstamm, 1997; Landry, Smith, & Swank, 2006; Landry, Smith, Swank, & Guttentag, 2008; Van Zeigl, Mesman, Van Ijzendoorn, Bakersman-Kranenburg, & Juffer, 2006). In a study examining the optimal timing of intervention for parents of typically developing children and children classified as high risk (Landry et al., 2008), some parenting qualities were improved with an intervention session when their children were either at the infant or toddler-preschool stage, whereas other parenting behaviours required intervention at both time points. The latter behaviours were those that require responsiveness to a child’s changing cues. It may be especially important for parents of children with delays to take part in on-going intervention because of their possible difficulties in interpreting their children’s dynamic cues. Because these children’s cues may not be typical, continual coaching might be needed to optimize responsive parenting. Although research (Landry et al., 2008) suggests that parental responsiveness interventions may show similar benefits for children who are typically developing and those who are at higher biological risk, high-risk children especially benefited when their parents participated in an intervention emphasizing warmth while the children were infants. Because of the differences in parenting of children with delays and children with biological risks shown in the present study, one should not assume that the same would be true for children with disabilities or suspected delays. More research is needed to explore what interventions may be useful to increase responsive parenting among parents of children with delays.

The limitations of the present research warrant discussion. Although we attempted to control for spurious variables that may affect disability indicators and optimal parenting, it was impossible to control for the entire constellation of these variables. We do not presume that disability indicators are the only factor at play in explaining variability in parenting. In addition, we cannot rule out the possibility that responsive parents are more likely to recognize their child’s potential disabilities and health conditions than less responsive parents. One could argue that parenting styles may be part of a group of variables that predict whether or not a child will be identified as having a delay or risk. We acknowledge the possibility of reciprocity in parenting and disability indicators.

In addition, the fact that only a small amount of variance in parenting was explained in these analyses (7% for warmth and 6% for parent–child activities when all predictors are included) despite the large sample points to the complexity of parenting. We acknowledge that a smaller sample may not have yielded significant results. Although parenting styles differed by child developmental and health status, other factors certainly influence responsive parenting.

Despite these limitations, this research contributes to understanding of which groups of parents may struggle with responsive parenting. This study contributes to our understanding of the nature of the needs of children and parents who live in poverty. If these parents are helped in responding to their children, the effects of the delays may be ameliorated. The need to provide parents with strategies for optimal parenting may go beyond those families for which we are already providing services. Although biological risks alone do not appear to place children at increased risk for less than optimal parenting, those children
who show signs of a delay may be receiving less responsive parenting. For these children, the risk of receiving less warm parenting is also exacerbated by poverty. Sadly, some of the children who might benefit from warm and supportive parenting the most may be the children who are least likely to receive it.

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