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Correlates and predictors of parenting stress among internationally adopting mothers: A longitudinal investigation

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Abstract

This study examined correlates and predictors of parenting stress among internationally adopting (IA) mothers with the goal of expanding the knowledge base on the experiences of adoptive parents. One hundred and forty-three IA mothers completed pre-adoption (Time 0) and six months post-adoption (Time 1) surveys with questions regarding child-, parent-, and family-related characteristics. Mother reports of higher depression symptoms, higher expectations of child developmental and behavioral/emotional problems, and a greater number of children in the family at pre-adoption were significantly related to higher parenting stress six months post-adoption. In contrast, mother reports of higher expectations for child acceptance and higher perceived social support at pre-adoption were significantly related to lower parenting stress six months post-adoption. Higher maternal depression symptoms, higher expectations of child behavior/emotional problems, and a greater number of children in the family at pre-adoption together accounted for 22% of the variance in parenting stress six months post-adoption. Concurrent higher maternal depression symptoms and higher reports of child behavioral/emotional problems predicted higher parenting stress six months post-adoption over and above pre-adoption predictors, and accounted for an additional 33% of the variance. Results and directions for future research are discussed from a transactional perspective, with particular emphasis on the importance of pre-adoptive information for adoption research and practice.

Keywords

adoption; children; depression; intercountry adoption; international adoption; longitudinal; parenting stress

International adoption has become increasingly common over the past two decades. For example, 19,613 foreign-born children were adopted by American citizens in 2007 (US Department of State, 2008), with many others adopted to Canada, Australia and European countries. As the numbers of internationally adopted (IA) children have grown, research describing their health, development, emotional adjustment, academic attainment and behavior has also accrued (Hjern, Lindblad, & Vinnerljung, 2002; International Adoption Project, 2002; Levy-Shiff, Zoran, & Shulman, 1997; Miller, 2005; Morison, Ames, & Chisholm, 1995; O'Connor & Rutter, 2000; Rutter & The ERA Study Team, 1998; Tan & Marfo, 2006; Tieman, van der Ende, & Verhulst, 2005). In general, this research suggests that IA children can be appropriately considered an “at risk” population.

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Many IA children adopted in the past 15 years have experienced a number of threats to healthy development, including institutional rearing, early abuse and neglect, inadequate health care and nutrition, and inadequate opportunities to form secure attachments to caregivers (e.g., Rutter & The ERA Study Team, 1998). At the same time, most research on IA children also indicates that despite elevated rates of risk, the majority of children and families demonstrate good post-adoption adaptation, suggesting powerful compensatory mechanisms attributable to adoptive family factors (Tan & Marfo, 2006; van IJzendoorn & Juffer, 2006; van Londen, Juffer, & van IJzendoorn, 2007). Despite this, most studies have utilized a framework that links child risk factors (e.g., duration of institutional rearing) to child outcomes (e.g., developmental deficits) (Rutter & The ERA Study Team, 1998), while significantly fewer studies have focused on the experiences of adoptive parents (e.g., Eanes & Fletcher, 2006; Judge, 2003; McGlone, Santos, Kazama, Fong, & Mueller, 2002; Palacios & Sánchez-Sandoval, 2006).

While these studies have been highly informative, they have often lacked from a theoretical framework that takes into account the interplay between child-, parent-, and family-related characteristics to explain variability in adoption outcomes; such a framework may significantly extend unidimensional models driven primarily by child characteristics. In this vein, transactional theory (Sameroff, 1975) predicts that outcomes are determined by the complex interplay of child, family, and environmental characteristics over time. In addition, studies utilizing this framework suggest that transactional theory may be particularly relevant for the study of at-risk groups (e.g., IA populations). For example, one study (Greenberg & Crnic, 1988) found that parent characteristics were strongly related to child developmental outcomes for premature infants but not for full-term infants. Thus, the goal of the current study was to examine the relative contributions of child-, parent-, and family-related characteristics to a specific adoption outcome—parenting stress. Parenting stress was chosen as the outcome of interest because of its role as a significant factor in both parent and child adjustment (Abidin, 1990; Crnic & Acevedo, 1995). Guided by models of parenting stress (Abidin, 1990, 1995) and transactional theory, Figure 1 shows child-, parent-, and family-related characteristics hypothesized to be implicated in parenting stress among internationally adopting families.

Transactional models and parenting stress

Theory suggests that parenting stress is multiply determined by child, parent, family, and ecological characteristics reciprocally influencing one another and contributing to outcomes (Abidin, 1990; Crnic & Acevedo, 1995). Longitudinal studies of parenting stress have shed light on these transactional processes and on the effects of parenting stress on child and parent outcomes (Deater-Deckard, Pinkerton, & Scarr, 1996; Hauser-Cram, Warfield, Shonkoff, & Krauss, 2001). In a four-year longitudinal study, parenting stress at the time of the first assessment was a strong predictor of increases in mother-reported child externalizing and internalizing problems over the four-year period (Deater-Deckard et al., 1996). Additionally, child behavior problems at the time of assessment predicted increases in child-domain parenting stress across a six-year period (Hauser-Cram et al., 2001).

Similarly, data from a cross-sectional study (Östberg & Hagekull, 2000) of 1,081 Swedish mothers found that children's irregular patterns of biologically governed behaviors (e.g., eating, sleeping, waking up), difficult temperament, and caretaking hassles (excessive crying, illness) were significantly related to parenting stress. Parent characteristics such as mothers' [older] age and high domestic workload were also related to higher parenting stress. Finally, a greater number of children in the family, low social support, and a higher number of negative life events (e.g., separation, death in the family) were also related to

higher parenting stress, pointing to the relevance of family-related characteristics (Östberg & Hagekull, 2000).

These models of parenting stress have also found support in the special needs literature. Child hyperactive behaviors were related to elevated reports of parenting stress—often through their negative impact on parent–child relations (Mash & Johnston, 1990). Similarly, parents of children with medical problems reported higher parenting stress both as a direct result of their child's illness (Frank, Olmstead, Wagner, & Laub, 1991), and because of the increase in daily hassles involved in parenting an ill child (Crnic & Acevedo, 1995). The increased number of caregiving demands has been found to be significantly related to higher parenting stress in mothers of handicapped children born prematurely (Beckman & Pokorni, 1988). As in studies of families of children without special needs (Östberg & Hagekull, 2000), factors beyond the child, including fewer social supports, lower socioeconomic status, and higher psychological distress were also significantly related to higher parenting stress in biological families (Crnic & Acevedo, 1995; Kersh, Hedvat, Hauser-Cram, & Warfield, 2006).

Given that a sizable proportion of adopted children have elevated rates of health, developmental, and behavioral problems (i.e., special needs), it is reasonable to expect that relations identified in birth families of special needs children might operate similarly in some adoptive families. Indeed, child characteristics such as chronic medical problems (Judge, 2003; McGlone et al., 2002), gender (Palacios & Sánchez-Sandoval, 2006), behavioral problems (Judge, 2003; Mainemer, Gilman, & Ames, 1998; McGlone et al., 2002; Rijk, Hoksbergen, ter Laak, van Dijkum, & Robbroeckx, 2006; Rosenthal & Groze, 1990), and developmental delays (Judge, 2003) were significantly related to elevated parenting stress in adoptive parents.

Beyond child characteristics, structural family characteristics such as lower income, young maternal age, and greater number of children in the family also relate to elevated parenting stress in adoptive families (Mainemer et al., 1998). Consistent with parenting stress models reviewed earlier, a recent study (Palacios & Sánchez-Sandoval, 2006) of parents of 104 Spanish children adopted domestically found a combination of child (i.e., special needs and being male) and parent (i.e., lower use of affect and communication, higher emphasis on their family's differences in comparison to nonadoptive families, and having a relationship with the child prior to adoption) characteristics predictive of elevations in mothers' parenting stress. Although family-related characteristics were not examined, this study suggests that parenting stress in families with adopted children is likely multi-determined and affected by the interplay of both child and parent characteristics.

Parenting stress, parent expectations, and parental adjustment in internationally adopting families

Conceptual models of parenting stress also emphasize the influence of parental cognitive processes, such as attitudes, beliefs, and expectations on parenting behavior and parents' subjective experience of stress (Abidin, 1990; Deater-Deckard, 2004; Holden & Edwards, 1989; Mash & Johnston, 1990; Östberg & Hagekull, 2000). Indeed, these cognitive sets are hypothesized to guide parental behavior towards the child and serve as a lens through which child behavior is interpreted (Azar, Robinson, Hekimian, & Twentyman, 1984; Brunk & Henggeler, 1984). Despite the fact that much of adoption social work policy is organized around the practice of helping prospective parents to develop appropriate expectations for their adopted children (Barth & Berry, 1988), empirical research relating expectations to outcomes in IA families is scant. The limited evidence available from the domestic adoption and foster care literature suggests that the “mismatch” between parent expectations and child

characteristics such as externalizing behavior problems plays a powerful role in adoption failure (Barth & Berry, 1988; Crea, Barth, Guo, & Brooks, 2008; Reilly & Platz, 2003).

In this literature, “expectations” are usually defined as parents' views regarding their adopted children's educational, social, behavioral, and vocational potential, which may vary substantially from the parents' own capacities in these areas. Failed expectations are hypothesized to result in parental stress and dissatisfaction, and mediate the link between child characteristics and failure of the adoptive placement (Barth & Berry, 1988). This definition of “expectations” in the adoption and foster care literature is distinctly different from that utilized in research on the transition-to-parenthood in birth families, where “expectations” generally refer to parents' beliefs about how their roles, relationships, and time allocation will change following the birth of their child (Belsky, Ward, & Rovine, 1986). No study to date, however, has examined adoptive parents' expectations for their *child* and the relation of these to parenting stress. This is unfortunate, in light of the emphasis placed on parental cognitions (e.g., attributions, expectations) in conceptual models of parenting stress (Mash & Johnston, 1990).

The present study

In an effort to expand the knowledge base on the experiences of parents of IA children, this study sought to examine links between pre-adoptive, as well as concurrent child-, parent-, and family-related characteristics with parenting stress in a longitudinal sample of 143 internationally adopting mothers. Two data-waves were used: the first (“Time 0”) gathered information from prospective mothers prior to the arrival of their IA child, and the second (“Time 1”) was collected six months after the adoption was completed. Parenting stress was measured in the second wave. Because Time 0 data were collected prior to adoption, parent and family-related characteristics were uninfluenced by child characteristics at this time point. We sought to answer the following three questions: (1) what is the relation between pre-adoptive factors (i.e., child-, parent-, and family-related) and mothers' parenting stress six months post-adoption? (2) when examined in conjunction, which pre-adoption factors predict parenting stress six months post-adoption? and (3) are there concurrent post-adoption factors that offer a unique contribution to parenting stress over and above pre-adoption factors?

Regarding the first question, we hypothesized that child-related characteristics that could be identified pre-adoption, specifically the adoption of a special needs child (Rosenthal & Groze, 1994) or a boy (Coon, Carey, Corley, & Fulker, 1992; Palacios & Sánchez-Sandoval, 2006), would be significantly related to higher parenting stress six months post-adoption. We also hypothesized that parent-related pre-adoption characteristics (specifically higher rates of maternal depression symptoms) would be significantly related to higher parenting stress six months post-adoption (Beck, 2001). We also hypothesized that parents who expected more child problems, in particular behavioral/emotional problems, at pre-adoption would be more prepared for parenting challenges and would thus experience lower parenting stress six months post-adoption. Finally, we also hypothesized that family-related pre-adoption characteristics, specifically a greater number of children in the family and lower social support (Östberg & Hagekull, 2000), would be associated with higher levels of parenting stress six months post-adoption. Regarding the second question, we hypothesized that maternal age (Östberg & Hagekull, 2000), higher maternal depression symptoms (Beck, 2001), and lower maternal expectations of child problems would significantly predict higher parenting stress six months post-adoption. The direction of effects for maternal age is not specified because studies on the effects of maternal age on parenting stress, aside from those looking at adolescent mothers (Teti & Lamb, 1989), are rare and inconclusive. Finally, regarding the third question and based on findings documenting strong effects of concurrent

child behavior problems (Kersh et al., 2006; Mash &Johnston, 1990; Webster-Stratton, 1990) and maternal depression (Cummings, Davies, & Campbell, 2000) on parenting stress, we hypothesized that these two variables would make a unique contribution to parenting stress over and above pre-adoption variables.

Method

Participants

Participants were 143 adoptive mothers participating in a longitudinal study of international adoption. Tables 1 and 2 provide relevant demographic characteristics of mothers and children, respectively (see Welsh, Viana, Petrill, & Mathias (2008), for further sample details). All participants in this study were recruited through six collaborating agencies specializing in international adoptions who had agreed to forward pre-adoption survey packets to all of their clients accepting a child referral within a 12-month period. Families were eligible to participate if they had accepted a child referral but not yet met the child or brought him/her home. Interested respondents returned the pre-adoptive survey along with signed informed consent forms. Twenty-five percent of eligible participants responded to the first survey, a figure comparable to the response rates found in other studies employing mail survey methodology (Johnson, 1998; Lepkowski & Couper, 2002). However, approximately 5% of respondents were excluded from the sample because they did not receive or complete the survey until after the adoption was completed, yielding a final response rate of 20%. Six months following the adoption, mothers completed the first post-adoption survey. Attrition between waves was 34%.

Measures

Parents completed written surveys at both Time 0 and Time 1. The Time 0 survey included questions regarding parents' social support, psychological distress, and information regarding the prospective adopted child (including age, gender, special needs, birth country, and rearing conditions prior to adoption). Additionally, the Time 0 survey included questions regarding parents' expectations regarding their prospective adopted child. The Time 1 survey included a measure of parenting stress and items assessing the child's current health, behavior, attachment, acceptance by friends and family, and development. Survey questions and constructs were derived from those used in previous studies (either adoption studies or, in the absence of these, studies from the broader child development literature) and identified as potentially relevant to adjustment outcomes of both children and mothers. Depending upon the measure, dimensionally rated items were scored on a four- or five-point scale indicating the degree to which the parent endorsed the statement (e.g., “strongly disagree,” “disagree,” “agree,” “strongly agree”). Certain items were reverse-scored so that for all scales, a higher score indicated higher levels of endorsement. Scales and constructs assessed by the survey are described next, and Cronbach's alphas are reported when appropriate.

Measures and constructs assessed at pre-adoption at pre-adoption and six months post-adoption

Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983)—Derived from Symptom Checklist-90-R (SCL-90-R; Derogatis, 1983), the BSI is a 53-item self-report instrument that assesses the presence of psychological symptoms in adults. Participants are asked to rate on a five-point scale ranging from 0 (“not at all”) to 4 (“extremely”) the extent to which they had experienced a number of psychological symptoms in the past two weeks. The BSI allows for assessment of nine symptom dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. In this study, only the depression dimension was used (six items,

e.g., “feeling blue”; Time 0 α = .59; Time 1 α = .89). The BSI has shown good reliability and validity in several studies (Boulet, 1991; Broday & Mason, 1991; Derogatis, 1993).

Social support—The scale of social support was comprised of seven items assessing perceived level of support from families and friends available to adoptive mothers. Participants responded to questions by rating on a four-point scale ranging from 1 (“strongly disagree”) to 4 (“strongly agree”) the extent to which they agreed with statements such as “I/We have friends who can help out with logistical things” and “We have family members who can provide emotional support when I/we need it” (Time 0 α = .65; Time 1 α = .72).

Parental expectations—There were 21 items assessing parent expectations for the adopted child. For the purpose of this study, expectations were grouped according to the type of expectation assessed. Four domains were computed: (1) expectations of health problems (three items, α = .63; e.g., “I expect my child to have mild, temporary medical problems” and “I expect my child to have serious, long-term medical problems”), (2) expectations of developmental problems (six items, α = .76; e.g., “I expect my child to have mild communication problems that will resolve quickly” and “I expect my child to have serious, long-term developmental or learning problems”), (3) expectations of behavioral/emotional problems (six items, α = .68; e.g., “I expect my child to have serious, long-term emotional or behavioral difficulties” and “I expect my child to have serious, long-term difficulties with attachment”), and (4) expectations of child acceptance (six items, α = .85; e.g., “I expect my child to fit in well with our family” and I expect my child to fit in well in our community”).

Measures and constructs assessed at six months post-adoption

Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995)—The PSI-SF, derived from the Parenting Stress Index (PSI; Abidin, 1995), is a 36-item self-report questionnaire that asks parents of children between the ages of one month to 12 years to endorse—on a Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”) —the degree to which they are experiencing stress in relation to their parenting role. The PSI-SF yields a Total Stress score and three subscales labeled according to the source of stress: parental distress, parent-child dysfunctional interaction, and difficult child. The PSI-SF Total Stress score is obtained by adding all items, with possible scores ranging from 36 to 180. Because of the large number of variables included in the study, only the PSI-SF-Total Stress score was used (α = .91). Abidin (1995) reported excellent convergent validity with the measure's longer counterpart (PSI).

Ages and Stages Questionnaire (ASQ; Squires, Bricker, & Potter, 1997; Squires, Potter, & Bricker, 1999)—The ASQ is a 30-item parent-completed questionnaire designed to screen children for potential developmental delays during their first five years of life. The ASQ assesses development across five domains—communication (e.g., “When your child wants something, does she tell you by pointing to it?”; α = .70[1]), fine motor (e.g., “Does your child make a mark on the paper with the tip of a crayon when trying to draw?”; α = .71), gross motor (e.g., “Does your child climb on an object such as a chair to reach something he wants?”; α = .33), problem-solving (e.g., “After you have shown her how, does your child try to get a small toy that is slightly out of reach by using a spoon, stick, or similar tool?”; α = .62), and personal-social (e.g., “Does your child call herself ‘I’ or ‘me’ more often than her own name?”; α = .43)—with forms available for

[1]The ASQ has 11 forms (4, 6, 8, 12, 16, 18, 20, 24, 30, 36, and 48 months) and five domains of interest per form, yielding a total of 55 Cronbach's alphas. For brevity sake, this and subsequent alphas correspond to the form that was most frequently administered in our sample (i.e., 18 months). In general, results were consistent with alphas reported in Squires et al. (1997).

different developmental levels (e.g., 6-, 12-, 18-months of age). Parents are asked to rate on a three-point scale (0 = "not yet," 5 = "sometimes," and 10 = "consistently demonstrates the skill") the extent to which the child shows mastery of a domain-specific skill. Scores for each domain range from 0–60. Squires et al. (1997) reported adequate internal consistency, a test–retest reliability of .94, and a 75% average sensitivity to developmental delays across forms. A developmental composite was computed as the mean of the five domains, with higher scores indicating maternal endorsement of fewer developmental problems.

Health problems—These were assessed via 24 items that asked parents to endorse on a "yes" or "no" format whether their adopted child currently suffered from any of a series of commonly reported medical problems in adoptees (Miller, 2005; e.g., heart birth defect, fetal alcohol syndrome, cleft lip/palate). The number of endorsed medical problems were added and used as an overall index (i.e., count) of health problems. Because of the dichotomous nature of these items, internal consistency is not reported.

Behavioral/emotional problems—These were assessed using the same six items that asked parents about their expectations of child behavioral and emotional problems at Time 0 (e.g., "I expect my child to have serious emotional or behavioral difficulties"), only this time items were worded in the present tense (e.g., "My child seems to have serious emotional or behavioral difficulties" and "My child seems to have serious difficulties with attachment"). A composite of behavioral/emotional problems was computed as the mean of the six items, with higher scores indicating greater maternal endorsement of behavioral/emotional problems ($\alpha = .80$).

Child acceptance—A total of six items assessed the degree to which the child was perceived to fit within the family and to be accepted by extended family, friends, and the community. Mothers were asked to respond—on a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree")—the degree to which they agreed with items such as "my child seems to fit in well with our family," "my child is well accepted by our friends," and "my child is well accepted by our extended family." An acceptance composite was computed as the mean of the six items, with higher scores indicating greater maternal endorsement of child acceptance ($\alpha = .86$).

Results

Completers versus non-completers

To examine potential sample bias due to attrition, mothers who completed both Time 0 and Time 1 surveys ($N = 143$) and those who dropped out after only completing the Time 0 survey ($N = 71$) were compared across demographic variables and constructs of interest (e.g., depression symptoms, expectations). No significant differences were found between completers and non-completers across any of the variables of interest, with the exception of number of children: non-completers had significantly more children than completers, $t(112.86) = -2.58$, $p = .01$. Thus, there was no evidence to suspect systematic sampling bias due to attrition.

Preliminary analyses

No between-group differences were found in mothers' mean PSI-SF-TS scores according to adopted child's gender, $t(140) = -1.36$, $p = .66$, special needs status, $t(141) = -1.37$, $p = .17$, environment prior to adoption, $t(117.65) = 1.10$, $p = .28$, or country of origin, $F(4,137) = 1.04$, $p = .39$. Similarly, no between-group differences were found in mothers' mean PSI-SF-TS scores according to their educational level, $F(3, 139) = .182$, $p = .91$, marital status, $F(2, 140) = .457$, $p = .63$, or income, $F(4, 138) = .341$, $p = .85$. Mothers who already had

children, however, did report significantly higher PSI-SF-TS scores than mothers without other children, $t(140) = 2.15$, $p = .03$.

Relations between pre-adoptive characteristics and parenting stress six months post-adoption

Table 3 shows the interrelations between child-, parent-, and family-related characteristics and parenting stress six months post-adoption.

Child-related characteristics—As can been seen in Table 3, older child age at pre-adoption was significantly related to positive special needs status, $r(140) = .19$, $p = .02$. In addition, older child age at pre-adoption was significantly related to female child gender, $r(139) = .18$, $p = .03$. Contrary to hypotheses, however, child special needs status and gender were not significantly related to PSI-SF-TS scores.

Parent-related characteristics—Pre-adoption BSI-depression symptoms were significantly positively related to PSI-SF-TS scores, $r(141) = .19$, $p = .03$ (see Table 3). In addition, pre-adoption expectations of developmental, $r(143) = .20$, $p = .02$, and behavioral/emotional, $r(143) = .30$, $p < .01$, problems were significantly positively related to PSI-SF-TS scores. Pre-adoption expectations of child acceptance were significantly negatively related to PSI-SF-TS scores, $r(143) = -.17$, $p = .04$. Thus, mothers with higher pre-adoption depression symptoms, and higher expectations of developmental and behavioral/emotional problems, reported significantly higher parenting stress six months post-adoption. In contrast, mothers with higher expectations of child acceptance reported lower parenting stress six months post-adoption. Maternal age, income, and education at pre-adoption were not significantly related to parenting stress six months post-adoption.

Family-related characteristics—As can been seen in Table 3, mothers' reports of perceived social support at pre-adoption were significantly negatively related to PSI-SF-TS scores, $r(143) = -.19$, $p = .02$. The number of total children in the family was also significantly positively related to PSI-SF-TS scores, $r(143) = .27$ $p < .01$. Thus, mothers with higher perceived social support at pre-adoption reported lower parenting stress six months post-adoption, while mothers with a greater number of children in the family reported higher parenting stress.

Predictive relations between pre- and post-adoption variables and parenting stress six months post-adoption

Linear hierarchical multiple regression analyses were conducted using PSI-SF-TS as dependent variable to examine the extent to which the pre-adoption characteristics—previously identified as significantly related to parenting stress (see Table 3)—predicted parenting stress six months post-adoption. In addition, we were interested in examining the extent to which concurrent post-adoption characteristics made a unique contribution to parenting stress once the effect of pre-adoption characteristics was accounted for. Thus, a two-step linear hierarchical multiple regression was conducted with PSI-SF-TS as the dependent variable and pre-adoption parent- and family-related characteristics as predictors in the first step of the regression; post-adoption parent- and family-related characteristics entered the regression equation in the second step.

Specifically, with PSI-SF-TS as the dependent variable, pre-adoption (1) depression symptoms, (2) expectations of developmental problems, (3) expectations of behavioral/emotional problems, (4) expectations of child acceptance, (5) perceived social support, and (6) number of children entered the regression equation in the first step. In the second step, concurrent (i.e., Time 1) scores for each of these predictors (except for number of children—

entering this variable in the second step would have been the same as entering a constant) were entered to examine their independent contribution to PSI-SF-TS scores.

The full model was significant, $F(11, 131) = 14.68$, $p < .01$, indicating that the model, as a whole, accounted for a significant amount of variance in PSI-SF-TS scores. In the first step, pre-adoption BSI-depression symptoms, $t(136) = 3.53$, $p < .01$, number of children in the family, $t(136) = 2.91$, $p < .01$, and expectations of child behavioral/emotional problems, $t(136) = 2.92$, $p < .01$, significantly predicted PSI-SF-TS scores (see Table 4). Thus, higher reports of depression symptoms, higher expectations of child behavior and emotional problems, and a greater number of children in the family at pre-adoption significantly predicted higher parenting stress six months post-adoption. Together, these pre-adoption predictors accounted for 22% of the variance in parenting stress. In the second step, concurrent BSI-depression symptoms, $t(131) = 4.96$, $p < .01$, and concurrent child behavioral/emotional problems, $t(131) = 5.66$, $p < .01$, significantly predicted PSI-SF-TS. Thus, higher reports of concurrent depression symptoms and of child behavioral/emotional problems made a significant and unique contribution to higher parenting stress six months post-adoption over and above pre-adoption predictors. Concurrent predictors accounted for an additional 33% of the variance in parenting stress, and the model, as a whole, accounted for 55% of the variance in parenting stress six months post-adoption.

Discussion

This study adds to an accumulating body of research documenting the experiences of internationally adopted children and their parents (Eanes & Fletcher, 2006; Judge, 2003). We hypothesized that child characteristics, in particular child special needs status and gender, would be significantly related to maternal reports of parenting stress six months post-adoption. Contrary to predictions, child age, gender, or special needs status were not significantly related to parenting stress. This finding runs counter to previous studies showing worse outcomes for families adopting older special-needs children (Rosenthal & Groze, 1994) and boys (Coon et al., 1992). However, children in this sample were very young (Mean age = 1.37 years at the time of adoption), which may help explain the lack of association between children's age or gender and parenting stress six months post-adoption. Indeed, studies that do report an association between child gender, special needs status, and parenting stress generally consist of much older samples (e.g., Rosenthal & Groze, 1994).

Consistent with our hypothesis and a vast literature documenting the relation between maternal psychopathology and child and parent adjustment (e.g., Abidin, 1990; Beck, 2001; Williford, Calkins, & Keane, 2007), maternal depression symptoms prior to adopting a child were significantly related to higher parenting stress six months post-adoption. This finding suggests that despite the importance of child characteristics for adjustment post-adoption, at least some aspects of parenting stress are independent of child characteristics and may be identified prior to adoption. Research with birth families has shown that prenatal depression symptoms predict sleep problems in children (O'Connor et al., 2007), and maternal depression has been consistently associated with a number of inadequate parenting practices (Goodman, 2007) that can lead to dysfunctional mother–child interactions. A similar process may occur in some IA families. This finding also points to the importance of utilizing a more transactional approach when attempting to understand adjustment outcomes in adoption, rather than focusing exclusively on child characteristics. At the same time, the magnitude of the relation was modest and maternal self-reports of depression symptoms prior to the adoption were low and positively skewed, thereby restricting variability and the strength of the inferences that can be made.

We hypothesized that greater expectations of child problems, in particular behavioral/emotional problems, would be significantly related to lower parenting stress six months post-adoption. Contrary to predictions, however, mothers with higher expectations of child developmental and behavioral/emotional problems reported significantly *higher* overall parenting stress six months post-adoption, a finding also supported in our regression analyses. Past research on high risk domestic adoptions indicates that "appropriate expectations" on the part of prospective adoptive parents may be critical predictors of adoption outcomes (e.g., Crea et al., 2008; Reilly & Platz, 2003), and inappropriate expectations have been hypothesized to mediate the relationship between child and family characteristics and subsequent adoption failure (Barth & Berry, 1988). Thus, the available literature suggests that parents who "prepare for the worst" in terms of expectations for their children's behavior and development may have the best outcomes. We were somewhat surprised, therefore, to find that higher pre-adoption expectations of developmental, and behavioral/emotional problems were significantly related to *higher* parenting stress.

At first glance, these findings appear counterintuitive to the notion that expecting problems leads to better adjustment outcomes for adoptive families. Our initial thought was that the mothers in our sample who endorsed expectations of problems might simply have been more distressed prior to the adoption, and were thus also more vulnerable to parenting stress post-adoption. However, expectations were not significantly related to mothers' pre-adoptive self-reports of depression symptoms. It is possible that fewer negative expectations reflects greater confidence on the part of pre-adoptive mothers, and that this belief that their children will adapt well influences their subsequent parenting experience. It is important to note, however, that the relation between expectations of behavioral/emotional problems and later parenting stress was modest ($sr = .22$). Therefore, caution is warranted in the interpretation of these results.

These findings do strongly suggest that more research on the relations between parental expectations and subsequent adoption adjustment outcomes is needed. Specifically, expectations need to be clearly operationalized. Although adoption researchers and practitioners appear to regard expectations as critically relevant for adoption outcomes (Reilly & Platz, 2003), we could find no published measures of expectations or studies that clearly operationalized what was meant by "realistic expectations." Because prior research on adoption indicates the importance of child characteristics for outcomes, our measure of expectations focused exclusively on child characteristics. However, this approach may not have captured other factors relevant to mothers' later parenting experience. For example, in the literature on the transition to parenthood in birth families, measures of expectations emphasize changes in family roles and relationships (e.g., amount of time parents think they will spend on household chores or interacting with extended family) that occur as a result of the child's birth (Belsky et al., 1986). Our study did find that higher expectations of health and behavioral/emotional problems at pre-adoption were related to higher reports of actual health and behavioral/emotional problems six months post-adoption. Thus, maternal expectations of child problems were to some extent "realistic" with respect to the domains of health and behavior/emotion. Although realistic expectations about possible problems may in fact be associated with parents' later *satisfaction* with the adoption (i.e., the more realistic their expectations, the greater their satisfaction; Reilly & Platz, 2003), the ongoing expectation of potential problems may ironically also lead to higher parenting stress. Clearly, more data about the specifics of parents' pre-adoptive expectations and their alignment with post-adoption reality and adjustment are needed.

This study also hypothesized that pre-adoption family-related characteristics, namely a greater number of children in the family and lower perceptions of social support, would be significantly related to higher parenting stress post-adoption. Consistent with our hypothesis,

mothers with a greater number of children in the family reported higher levels of parenting stress, whereas mothers with higher perceptions of social support at pre-adoption reported lower levels of parenting stress. In the regression analyses, however, only number of children in the family remained significant. This suggests that different structural family characteristics related to parenting stress can be identified prior to the adoption, which in turn has implications for prevention and intervention efforts aimed at helping adoptive families adjust successfully.

Consistent with our final hypothesis, concurrent maternal depression symptoms and mother reports of child behavior/emotional problems made a unique contribution to parenting stress over and above pre-adoption characteristics. Indeed, these variables alone accounted for 33% of the variance in parenting stress, suggestive of the strong influence of concurrent maternal affective states (Cummings et al., 2000) and child behavior/emotional problems (Webster-Stratton, 1990) on adoptive mothers' parenting stress. The relevance of current behavioral/emotional problems to parenting stress is further supported by previous studies utilizing other samples, including domestic, public welfare adoptees (Barth & Berry, 1988), international adoptees from Eastern Europe (Judge, 2003), and biological families (Webster-Stratton, 1988, 1990). In addition, these findings suggest that adoptive mothers' present reality (i.e., current symptomatology and their child's behavior/emotional problems) is of critical importance in determining their subjective experience of stress related to parenting their adopted children. Our data indicate that while IA mothers may experience relatively lower rates of parenting stress and other negative outcomes compared to the general parent population, the factors and processes contributing to their experiences are similar.

Taken together, findings of this study are unique for at least two reasons. First, information was gathered before the adopted child was placed in the home. Typically, research on IA families has not examined factors such as expectations or parent psychological functioning in a prospective manner. The present investigation extended the available literature by examining the relation between pre-adoption characteristics (child-, parent-, and family-related) and parenting stress six months post-adoption. The pre-adoptive information obtained suggests that mothers' pre-adoption psychological functioning, their expectations for the adopted child, and structural characteristics of the family may be targets for preventive interventions designed to facilitate post-adoption adjustment.

Second, findings highlight the importance of simultaneously examining multi-level (e.g., child, parent, family) pre-adoption *and* post-adoption characteristics in adoption outcomes. As noted above, concurrent maternal depression symptoms and child behavioral/emotional problems predicted parenting stress above and beyond pre-adoption predictors. Thus, studying adoptive families at all phases of the adoption journey is likely to improve our understanding of adoption outcomes. In addition, a transactional approach that considers the potential interplay of variables at multiple levels of analysis appears well suited for furthering knowledge on the challenges faced by families adopting internationally.

Implications for practice

Results of this study suggest that parenting stress in adoptive mothers is related to parent and family-related factors (Östberg & Hagekull, 2000), some of which can be identified prior to the adoptive placement. As numerous studies of other adoption samples and of special needs biological children have shown, children's behavioral, medical, and developmental problems contribute to parenting stress and dissatisfaction with the child (Judge, 2003; Mainemer et al., 1998; Rijk et al., 2006). Thus, post-adoption supports that both address the health and developmental needs of children and recognize the mental health needs of parents may be beneficial for some families. While such supports are often routinely accessible to families

adopting from the domestic public welfare system, similar services are typically not offered to families adopting internationally.

Research conducted on IA children over the past two decades has documented numerous child-related risk factors that may affect post-adoption adjustment. However, far less research attention has been devoted to parent factors. Our data suggest that parent characteristics such as depression symptoms and maternal expectations of problems, and family-related characteristics such as number of children in the family and perceived social support may also contribute to adoption outcomes. These findings have implications for the homestudy process and for pre-adoptive services, both of which currently lack uniformity or an empirical evidence base. Specifically, adoption social workers should be attentive to parents' psychological states and perceptions of support, as well as to family structural characteristics. Currently, evidence-based interventions designed to strengthen the co-parenting relationship around the transition to parenthood in biological families are becoming available (Feinberg, 2002). As Hague Convention guidelines for pre-adoptive preparation in international adoption are widely implemented, such programs may also hold promise for enhancing the resilience of adoptive families as well. Similarly, the deleterious effects of maternal depression on child development have been well-documented in biological families (Beck, 2001). Although prospective IA parents generally report low rates of psychological distress and have high levels of protective factors relative to prospective birth parents (Levy-Shiff, Bar, & Har-Even, 1990), our data suggest that maternal depressive symptoms—before and after the adoption—may nonetheless play a significant role in post adoption adjustment, at least for a subset of IA families. Therefore, adoption professionals working with prospective families should be attuned to this issue and cognizant of the fact that parents may be hesitant to admit to such feelings during the course of a homestudy evaluation.

Limitations and directions for future research

This study is not, of course, without limitations. An important one was the use of a convenience sample. Adoption agencies were approached by the authors and only about half of them agreed to participate. It is likely that participating agencies differed from non-participating agencies in several important aspects (e.g., available support to parents). Additionally, contrary to some European countries where there is centralized record-keeping of families who adopt internationally—thereby facilitating population-based studies of IA—this information is not available in the US. Thus, the extent to which our findings generalize to larger populations of IA families remains an open question.

Another important limitation involved our measures. For the most part this study used well-established, standardized measures to assess constructs of interest. When this was not possible— because either the survey would be extremely long and therefore limit response rates, or simply because measures were not available—the authors utilized relevant preexisting measures, items, and/or developmental constructs to create scales with face validity. An example was our measure of expectations; to our knowledge there were no available measures of pre-adoptive parental expectations. The transition-to-parenthood literature does have measures that center on how parents expect the new child will affect their lives, but we could not find measures that centered on what parents expect *the child* to be like, which appears to be an important factor in adoption success. Although the internal consistency of our expectations measure was adequate (alphas ranged from .63–.85) and the measure correlated in the expected direction with mother reports of child problems, the measure's actual validity and reliability remain unknown. Clearly, better conceptualization and measurement of adoptive parents' expectations is needed.

From a research standpoint, the field of IA can benefit significantly from prospective studies beginning before the adoption. Most of the research on IA families has adopted a fairly linear, child-driven approach and initiates *after* the child is already in the home, when transactional processes are already well underway. This limits our ability to identify important family and contextual factors independent of child characteristics. Our ability to provide support for and enhance the outcomes of IA families and children will likely be facilitated by systematic efforts to understand the unique contributions of child, parent, and contextual characteristics, as well as the ways in which they reciprocally influence each other over time. Although this study found that some pre-adoptive characteristics (i.e., number of children already in the home, perceived social support, and maternal depression symptoms) were related to parenting stress six months after the adoption, many pre-adoptive characteristics remain unexplored. For example, our study did not examine families' pre-adoptive motivations for adopting or the amount or quality of pre-adoptive preparation they received. It is possible that these factors, along with others, may also impact the subsequent adjustment of IA children and families. It is important that future studies consider such factors, so that a more sophisticated and comprehensive understanding of the assets and needs of IA families can be achieved.

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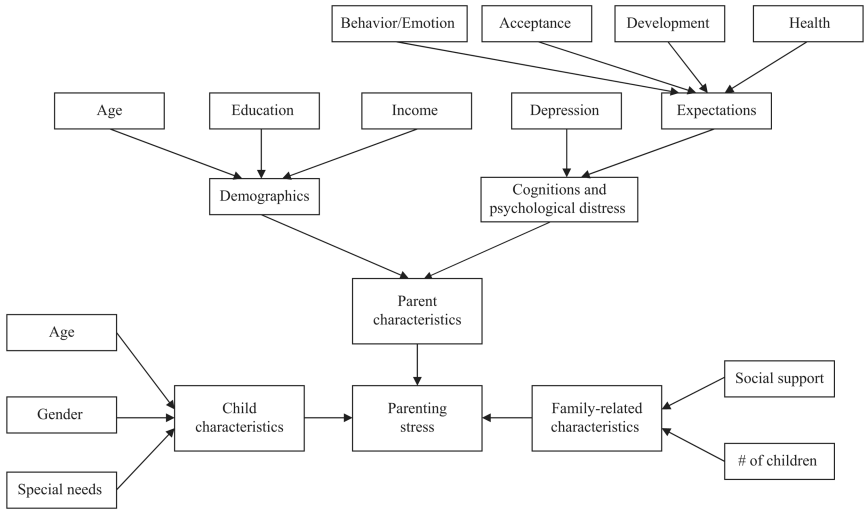

Figure 1.

Theoretical model of parenting stress in internationally adopting mothers. Behavior/Emotion = Maternal expectations of child behavioral/emotional problems; Acceptance = Maternal expectations of child acceptance by parents, family and friends, and the larger community; Development = Maternal expectations of child developmental problems; Health = Maternal expectations of child health problems; Special needs = prospective adopted child's special needs.

Table 1

Mothers' demographic characteristics

Variable (*N* = 143)	%
Maternal age (years): Mean (SD)	38.04 (5.12)
Marital status	
Married/cohabitating heterosexual couple	88.1
Single parent, female	10.5
Married/cohabitating female couple	1.4
Do you have other children?	
Yes	64.3
No	35.0
Not reported	0.7
Education	
High School	2.1
Some college	15.4
College	30.1
Graduate	52.4
Annual Income (US$)	
< 30,000	0.0
30,000 - 60,000	9.8
60,000 - 80,000	25.2
80,000 - 100,000	18.9
100,000 - 125,000	19.6
> 125,000	26.6

Note. SD = standard deviation.

Table 2
Children's demographic characteristics

Variable (*N* = 143)	%
Age at arrival (years): Mean (SD)	1.37 (1.53)
Child gender	
Male	39.2
Female	60.1
Not reported	0.7
Country of origin	
China	37.1
Korea	30.1
Latin America	12.6
Eastern Europe	10.5
Other Asia	9.1
Not reported	0.7
Environment prior to adoption	
Orphanage	50.3
Foster care	45.5
Not reported	4.2
Special needs	37.8
No special needs	62.2

Note. SD = standard deviation.

Table 3

Correlations between pre-adoption child-, parent-, and family-related characteristics and parenting stress 6 months post-adoption (*N* = 143)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Child characteristics														
1. Age	—													
2. Gender	.18*	—												
3. Special needs	.19*	−.03	—											
Parent characteristics														
4. Maternal age	.31**	.18*	.05	—										
5. Education	−.01	.21*	−.10	.17*	—									
6. Income	.05	.12	-.01	.08	.14	—								
7. Depression	−.12	−.16	.17*	−.01	−.20*	−.17*	—							
Expectations of:														
8. Behavior/emotional problems	.33**	.20*	.25**	.13	−.02	.05	−.15	—						
9. Child acceptance	−.25**	.15	−.18*	−.09	.07	−.02	−.11	−.37**	—					
10. Developmental problems	.29**	.29**	.14	.12	−.13	.01	−.03	.71**	−.22**	—				
11. Health Problems	.33**	.18*	.35**	.15	−.22**	.01	−.11	.42**	−.15	.43**	—			
Family-related characteristics														
12. Social support	−.07	−.01	−.03	−. 24**	.03	−.03	−.02	−.07	.21*	−.06	−.11	—		
13. # of children	.22**	.19*	.13	.13	−.12	.12	−.21*	.30**	−.09	.25**	.27**	−.14	—	
14. PSI-SF-TS	.02	.11	.12	.10	−.01	.03	.19*	.30**	−.17*	.20*	.14	−.19*	.27**	—
M	1.37	0.61	0.38	38.04	3.33	4.28	0.04	2.14	3.57	2.19	2.32	3.38	1.05	68.34
SD	1.53	0.49	0.49	5.12	0.81	1.36	0.10	0.37	0.36	0.46	0.60	0.43	1.08	15.38

Note. Depression = Brief Symptom Inventory depression subscale; PSI-SF-TS = Parenting Stress Index-Short Form, Total Stress score; Education range = 1–4; Income range = 1–6; Depression range = 0–4; Expectation scales range = 1–4, with higher scores indicative of greater expectations of problems. For the expectations of child acceptance scale, higher scores indicate greater expectations for the child to be accepted by family, friends, and community; PSI-SF-TS range = 36–180; *M* = mean; *SD* = standard deviation.

* $p < .05$;

** $p < .01$.

Table 4

Hierarchical multiple regression analysis predicting parenting stress total scores with pre- and 6 months post-adoption parent and family-related characteristics (*N* = 143)

Step and predictor variable	R^2	ΔR^2	*sr*	β
Step 1 (*pre-adoption*)	.22***			
Depression			.27***	.28
Expectations of:				
Behavior/emotional problems	.22**	.34		
Child acceptance			.01	.01
Developmental problems			−.06	−.09
Number of children			.22**	.24
Social support			−.13	−.14
Step 2 (*post-adoption*)	.55***	.33***		
Depression			.29***	.32
Behavior/emotional problems			.33***	.42
Child acceptance			−.10	−.13
Developmental problems			−.09	−.10
Social support			−.07	−.12

Note. Depression = Brief Symptom Inventory depression subscale. Developmental problems = mean of ASQ subscales. The coefficient for developmental problems is negative because higher scores on the ASQ indicate fewer developmental problems.

*** $p < .001$;

** $p < .01$.