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## Maternal intrusiveness, family financial means, and anxiety across childhood in a large multiphase sample of community youth

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### Abstract

Intrusive parenting has been positively associated with child anxiety, although examinations of this relationship to date have been largely confined to middle to upper middle class families and have rarely used longitudinal designs. With several leading interventions for child anxiety emphasizing the reduction of parental intrusiveness, it is critical to determine whether the links between parental intrusiveness and child anxiety broadly apply to families of all financial means, and whether parental intrusiveness prospectively predicts the development of child anxiety. This study employed latent growth curve analysis to evaluate the interactive effects of maternal intrusiveness and financial means on the developmental trajectory of child anxiety from 1<sup>st</sup> grade to age 15 in 1,121 children (50.7% male) and their parents from the NICHD SECCYD. The overall model was found to provide good fit, revealing that early maternal intrusiveness and financial means did not impact individual trajectories of change in child anxiety, which were stable from 1<sup>st</sup> to 5<sup>th</sup> grade, and then decrease from 5<sup>th</sup> grade to age 15. Cross-sectional analyses also examined whether family financial means moderated contemporaneous relationships between maternal intrusiveness and child anxiety in 3<sup>rd</sup> and 5<sup>th</sup> grades. The relationship between maternal intrusiveness and child anxiety was moderated by family financial means for 1<sup>st</sup> graders, with stronger links found among children of lower family financial means, but not for 3<sup>rd</sup> and 5<sup>th</sup> graders. Neither maternal intrusiveness nor financial means in 1<sup>st</sup> grade predicted subsequent changes in anxiety across childhood. Findings help elucidate for *whom* and *when* maternal intrusiveness has the greatest link with child anxiety and can inform targeted treatment efforts.

### Keywords

parenting; child; anxiety; intrusiveness; income; latent growth modeling

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Anxiety disorders are among the most common mental disorders experienced by children and adolescents, affecting up to 32% of youth by adolescence (Costello, Mustillo, Erkanli, Keeler & Angold, 2003; Merikangas, Nakamura, & Kessler, 2009; Merikangas et al., 2010). Child anxiety disorders are highly debilitating and negatively affect children's functioning in school and recreational activities, as well as their relations with family members and peers

(Essau, Conradt, & Petermann, 2000; Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001; Strauss, Frame, Forehand, 1987). Furthermore, the presence of an anxiety disorder in childhood places the child at increased risk for anxiety disorders, depression, and substance abuse in adulthood (Kim-Cohen et al., 2003; Kovacs, Gatsonis, Paulauskas, & Richards, 1989; Kushner, Sher, & Beitman, 1990). Anxiety disorders persisting into adulthood are associated with considerable occupational impairments and reduced health-related quality of life (Comer et al., 2011; Merikangas et al., 2007). Accordingly, understanding factors associated with the development and maintenance of anxiety across childhood is critical.

Empirical work shows parenting behaviors may be linked to the development and maintenance of anxiety in school-aged and preschool-aged children. Specifically, intrusive/overinvolved and overcontrolling parenting have been associated with the presence and severity of child anxiety (e.g., Bayer, Sanson, & Hemphill, 2006; Dumas, LaFreniere, & Serketich, 1995; Hudson & Rapee, 2002; Rubin, Cheah, & Fox, 2001; Siqueland, Kendall, & Steinberg, 1996; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Such parenting entails excessive parental regulation of children's activities and routines, discouragement of children's autonomy and independence, encouragement of children's dependence on parents, and instruction to children on how to think or feel (Barber, 1996; McLeod, Wood, & Weisz, 2007; Steinberg, Elmer, & Mounts, 1989). The relationship between such parenting and child anxiety has been found most reliably when parenting constructs have been assessed via observational methods (Wood et al., 2003), such as coded parent-child interaction tasks. During these tasks parenting behavior is commonly defined as intrusive when the behavior restricts the child and prevents him or her from experiencing a developmentally appropriate degree of autonomy (Hudson, Comer, & Kendall, 2008; Wood, 2006).

Meta-analytic examination across studies documents the largest effect with regard to the association between child anxiety and parenting that does not grant developmentally appropriate child autonomy (pooled ES = .42; McLeod et al., 2007). Such parenting is believed to encroach upon children's autonomous functioning and independence, which can foster a sense of hopelessness that is associated with increased anxiety (Chorpita & Barlow, 1998; Wood et al., 2003). Further, intrusive parenting behaviors when the child is experiencing negative affect may serve to inadvertently maintain anxiety by preventing the child from fully participating in anxiety-provoking situations—experiences that would otherwise afford critical opportunities to mastery anxiety in situ and modify maladaptive cognitions regarding fear-eliciting stimuli (Dadds & Barrett, 2001; Wood, Piacentini, Southam-Gerow, Chu, & Sigman, 2006). Accordingly, evidence-based treatments for childhood anxiety often take a parenting-focused approach, and specifically target the reduction of intrusive/overinvolved and overcontrolling parenting as a core treatment objective (e.g., Barrett, Dadds, & Rapee, 1996; Comer et al., 2012; Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008).

Although a growing body of literature supports a link between intrusive parenting behavior and the presence and severity of child anxiety, empirical work to date in this area has focused almost exclusively on relatively small samples of youth from clinic-based samples in academic settings. Findings from youth from clinics in academic settings may not generalize to the broader spectrum of youth in the general population, particularly with

regard to economic diversity, as the majority of work in this area has been conducted with families of middle to high socioeconomic status (SES), or families of unreported SES (Bayer et al., 2006; Hudson & Rapee, 2002; Rubin et al., 2001; Siqueland et al., 1996). Further, research examining relationships between intrusive parenting and child anxiety in economically diverse community samples (e.g., Edison et al., 2011; Gray, Carter, and Silverman, 2010) has focused on geographically restricted regions, limiting the broad generalizability of these findings.

Although research has examined SES as it relates to broad-based composites of parenting dimensions (e.g., negative parenting and maternal sensitivity) and their relationships with broad classes of child symptoms (e.g., internalizing problems) (Belsky, Bell, Bradley, Stallard, & Stewart-Brown, 2006; Dumas et al., 1995; Feng, Shaw, & Moilanen, 2011; NICHD, 2005), such work does little to inform the specific relationships between parental intrusiveness and child anxiety. Given that higher rates of anxiety and other emotional and behavioral problems are found in low-income children (Dumas et al., 1995; Essex et al., 2006; Johnson, Cohen, Dohrenwend, Link, Brook, 1999; McLoyd, 1998), and some parenting work suggests that too little involvement (i.e., poor parental monitoring) is associated with internalizing symptoms (Bacchini, Miranda, & Affuso, 2011; Buckner, Mezzacappa, & Beardslee, 2003; Grant et al., 2003; Nebbitt & Lambert, 2009; Whittaker, Harden, See, Meisch, & Westbrook, 2011), to optimally inform treatment efforts for the broad spectrum of families needing care it is critical to clarify how relationships between parental overinvolvement and child anxiety outcomes are affected—or unaffected—by differences in financial means. Without a clear understanding of how parenting behaviors interact with financial means to develop or maintain maladaptive child outcomes, it remains unclear whether treatment-seeking families at economic disadvantage would be expected to benefit from the same degree of parent-focused intervention showing support in middle- to upper-class families, or whether interventions with a less prominent parenting focus may be better suited to families at economic disadvantage.

The relationship between intrusive/overprotective parenting and the development of child anxiety has yet to be evaluated as a function of family financial means. As current early interventions for child anxiety stress the importance of reducing intrusive parenting behaviors (Comer et al., 2012; Pincus, Ehrenreich, Santucci, & Eyberg, 2008; Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2010), it is essential to determine whether findings linking parental intrusiveness to child anxiety can be generalized to families of varying financial means. To optimally inform interventions to be disseminated to families across a range of financial means, the present study examined household income relative to the poverty threshold as a moderator of the relationship between maternal intrusiveness and child anxiety across childhood in a large multiphase sample of U.S. community youth. Specifically, we hypothesized that this income-to-needs ratio would moderate the relationship between maternal intrusiveness in 1<sup>st</sup> grade and the trajectory of child anxiety from 1<sup>st</sup> grade to age 15. In addition to prospective analyses examining longitudinal growth, we examined the contemporaneous relationships between maternal intrusiveness financial means and child anxiety in 3<sup>rd</sup> and in 5<sup>th</sup> grades.

## Methods

### Participants

Participants included 1,121 children and their mothers who participated in phases II-IV of the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (SECCYD; a large, national multiphase study of parenting, childcare experiences, and child outcomes). Participants were recruited in 1991 into Phase I of this study when the child was 1 month old. Families were recruited through 10 data collection sites across the United States: Arkansas, California, Kansas, Massachusetts, Pennsylvania (Pittsburgh and Philadelphia), Virginia, Washington, North Carolina, and Wisconsin. Children and their mothers were excluded if: 1) the mother was younger than 18 years at the time of the child's birth, 2) the mother was not able to converse in English, 3) the child had obvious disabilities at birth or remained in the hospital > 7 days after birth, and 4) if the family did not plan to remain within the catchment area for at least 3 years. As reported elsewhere, study procedures were approved by the institutional review boards at the 10 NICHD-SECCYD study sites and informed consent was obtained from all participating families (Duckworth, Quinn, & Tsukayama, 2012). The 1,121 children included in the present analyses were 50.67% boys and were on average 6.45 years old ( $SD=0.50$ ) at the time of their 1<sup>st</sup> grade assessment. The racial breakdown of children was: 81.45% Caucasian, 11.86% African-American, 1.52% Asian/Pacific Islander, 0.27% Native American/Aleutian, and 4.91% other. The racial breakdown of mothers was: 83.76% Caucasian, 11.78% African-American, 2.14% Asian/Pacific Islander, 0.62% Native American/Aleutian, and 1.69% other. The majority of children and their mothers identified as Non-Hispanic, 93.84% and 95.45%, respectively. Among the families included in the present analyses, 8.55% were characterized as living below the poverty line, 18.64% near poverty/working poor, 47.35% low-middle to middle class, and 25.46% relatively affluent (NICHD, 2009). More details regarding the SECCYD sample can be found elsewhere (see Allhusen et al., 2001).

### Measures

**Child anxiety**—Child anxiety was assessed through the Anxiety Problems Scale of the Child Behavior Checklist (CBCL; Achenbach, 1991) at six developmental time points (1<sup>st</sup> grade, 3<sup>rd</sup> grade, 4<sup>th</sup> grade, 5<sup>th</sup> grade, and 6<sup>th</sup> grade, and age 15). The CBCL is a 113 item parental report used extensively and designed to assess a broad range of children's behavioral and emotional functioning. This measure provides six DSM-IV oriented scales, including the Anxiety Problems Scale. The Anxiety Problems scale is comprised of questions assessing a broad range of anxiety related behaviors that are associated with a variety of child anxiety disorders, including clinging to adults, worrying, fearfulness and nervousness. The reliability and validity of the Anxiety Problems DSM-IV oriented scale has been demonstrated in previous samples of children and adolescents (Nakamura, Ebesutani, Bernstein, & Chorpita, 2009). Further, the Anxiety Problems scale has been found to discriminate well between children with and without anxiety disorders, and discriminates between children with anxiety and depressive disorders better than the empirically derived anxious/depressed scale of the CBCL (Ebesutani et al., 2010). Participating mothers completed the CBCL at each time point in the laboratory or via mail.

In the present sample, the Anxiety Problems Scale of the CBCL demonstrated adequate internal consistencies across all time points: 1<sup>st</sup> grade ( $\alpha = .57$ ), 3<sup>rd</sup> grade ( $\alpha = .65$ ), 4<sup>th</sup> grade ( $\alpha = .67$ ), 5<sup>th</sup> grade ( $\alpha = .66$ ), and 6<sup>th</sup> grade ( $\alpha = .66$ ), and at age 15 ( $\alpha = .65$ ).

**Financial means**—An income-to-needs ratio was computed to capture family financial means. This ratio was calculated by dividing the total reported family household income, including government assistance, by the poverty threshold, as set by the U.S. Census bureau each year, which takes into account the number of people in the household and number of children. An income-to-needs ratio score of  $< 1.0$  = poverty,  $1.0$  = at the poverty index,  $1.0$ - $2.0$  = near poverty “working poor”,  $2.0$ - $5.0$  low-middle to middle class, and  $> 5.0$  = relatively affluent (NICHD, 2009). Financial means values included in the current analyses reflect the demographic information reported by the family when their child was in 1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> grade.

**Maternal intrusiveness**—Maternal intrusiveness was measured through a 15-minute parent-child interaction task—completed by mothers and their child. Mothers and children completed this task in a laboratory when the child was in 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> grades. This task was designed for the NICHD SECCYD and the observational rating scale on which mothers were rated was adapted from Egeland and Heister's Teaching Task Rating Scales (1993). In first grade the task was comprised of three semi-structured play activities, two of which were designed to be too difficult for the child to do without the mother's assistance. The first task was an Etch-A-Sketch drawing task, during which the mother and child had to operate the knobs together to draw a house and tree. The second task required children to fill in cutout frames with patterned tiles. The third activity was an interactive card game during which children and their mothers competed against each other to win cards. All observations were video taped and independently rated by trained coders blind to family financial means and child anxiety status on a 7-point global rating scale to reflect the degree to which the mothers respected the child's autonomy during the three semi-structured activities (NICHD ECRN, 2002). In 3<sup>rd</sup> and 5<sup>th</sup> grade, the mother-child interaction task was comprised of two activities; a planning task and a discussion task. On this scale, mothers were rated as exhibiting, very low, low, moderately low, moderate, moderately high, high, or very high respect for their child's autonomy. Lower scores indicated greater intrusiveness and higher scores indicated that the mother recognized and respected the child's individuality, motives, and perspectives. For the present analyses, responses on this scale were reverse scored, so that higher scores reflected greater intrusiveness and reduced parental respect for child autonomy. Acceptable inter-rater reliability was established for the respect for autonomy ratings in a sub-sample of 242 mothers of 54 month-old children ( $r = .64$ , and  $r > .77$  when estimated using repeated measures ANOVA; NICHD, n.d.).

## Data Analysis

Prospective longitudinal relationships between maternal intrusiveness and growth in child anxiety, and the potential moderating function of family financial means, were examined via latent growth models using Mplus 6.0 (Muthén & Muthén, 1998-2010). A maximum likelihood (ML) estimator was used to fit the unconditional LGM containing both linear and quadratic slope factors to the data to evaluate steady and accelerating growth in child

anxiety. This LGM evaluated linear and quadric changes in child anxiety from 1<sup>st</sup> grade to age 15, incorporating child anxiety data from 6 developmental time points: 1<sup>st</sup> grade, 3<sup>rd</sup> grade, 4<sup>th</sup> grade, 5<sup>th</sup> grade, and 6<sup>th</sup> grade, and at age 15. A number of indices were used to assess model fit ( $\chi^2$ , SRMR; RMSEA; CFI; TLI). Modification indices were also examined to determine if freeing any model parameters would enhance model fit. Maternal intrusiveness, family financial means, and their interaction, were then entered into the model (see Figure 1) and the data were fit to the conditional LGM to evaluate if family financial means moderated the longitudinal relationship between maternal intrusiveness and changes in anxiety across childhood.

To examine whether family financial means moderated the contemporaneous relationships between maternal intrusiveness and child anxiety at each major time point, cross-sectional analyses were conducted using multiple regression. These analyses were conducted in 3 steps: 1) maternal intrusiveness was regressed onto child anxiety, 2) financial means and maternal intrusiveness were regressed onto child anxiety, 3) the mean centered product term of maternal intrusiveness and financial means were added to the multiple regression as a third predictor of child anxiety.

## Results

### Longitudinal Analyses

To examine relationships between parental intrusiveness and the development of subsequent child anxiety, and whether such relationships are moderated by the family's financial means, an unconditional latent growth model was first fit to the child anxiety data from 1<sup>st</sup> grade through age 15 (See Table 1 for means of all observed variables). As the quadric growth factor provided good fit to the data, a piecewise linear model was evaluated to enhance interpretability of slope differences. The piecewise slopes included a pre-5<sup>th</sup> grade linear slope and post-5<sup>th</sup> grade nonlinear slope. A piecewise slope demonstrated good fit to the data ( $\chi^2=34.97$ ,  $p<.01$ , SRMR=0.02, RMSEA=0.04 90% CI=.03-.06, CFI=0.99, TLI=0.99; see Table 2 for unstandardized parameter estimates). The fixed effects were not significant for the pre-5<sup>th</sup> grade slope (i.e., Slope 1), but were significant for the post-5<sup>th</sup> grade slope (i.e., Slope 2), meaning that on average, children did not experience significant change in anxiety from 1<sup>st</sup> to 5<sup>th</sup> grade, but did experience significant nonlinear decreases in anxiety from 5<sup>th</sup> grade to age 15. The random effects for pre-5<sup>th</sup> grade and post 5<sup>th</sup> grade slopes were statistically significant, meaning that children experienced significant individual differences in anxiety change from 1<sup>st</sup> to 5<sup>th</sup> grade and from 5<sup>th</sup> grade to age 15. The random effects for intercept were also significant ( $p<.01$ ), indicating that there were significant individual differences in level of child anxiety at grade 1.

As the unconditional model demonstrated good fit, the model was then fit as a conditional model, in which the growth factors were regressed onto maternal intrusiveness at grade 1 ( $MI_1$ ) and family financial means at grade 1 ( $FM_1$ ). The conditional model demonstrated good fit to the data ( $\chi^2=40.767$ ,  $p<.01$ ; SRMR=0.02; RMSEA=0.04 90% CI=.02-.05; CFI=0.99, TLI=0.99). The model accounted for 2.5% ( $p=.06$ ) of the variance in grade 1 anxiety scores, 0.3% ( $p=.60$ ) of the variance in anxiety slope from grade 1 to grade 5, and 0.6% ( $p=.37$ ) of the variance in anxiety slope from grade 5 to age 15. The level of  $MI_1$  was

found to account for significant unique variance in the level of child anxiety at grade 1 ( $MI_1 \rightarrow \text{Intercept}$  standardized pathway=.09,  $p=.03$ ), when controlling for  $FM_1$ . The initial level of  $FM_1$  also accounted for significant unique variance in the level of child anxiety at grade 1 ( $FM_1 \rightarrow \text{Intercept}$  standardized pathway=-.11,  $p=.01$ ), when controlling for  $MI_1$ . The initial level of  $MI_1$  did not account for significant unique variance in the slope of child anxiety from grade 1 to 5 ( $MI_1 \rightarrow \text{Slope 1}$  standardized pathway=-.06,  $p=.31$ ), or from grade 5 to age 15 ( $MI_1 \rightarrow \text{Slope 2}$  standardized pathway=-.02,  $p=.55$ ), when controlling for  $FM_1$ . Likewise, the initial level of  $FM_1$  did not account for significant unique variance in the slope of child anxiety from grade 1 to 5 ( $FM_1 \rightarrow \text{Slope 1}$  standardized pathway=-.00,  $p=.94$ ) or from grade 5 to age 15 ( $FM_1 \rightarrow \text{Slope 2}$  standardized pathway=.07,  $p=.12$ ), when controlling for  $MI_1$ .

The  $MI_1 \times FM_1$  interaction term was then entered into the conditional LGM. The conditional model demonstrated good fit to the data ( $\chi^2=42.34$ ,  $p<.01$ ; SRMR=0.02; RMSEA=0.03 90%CI=.02-.05; CFI=0.99, TLI=0.99). See Figure 1 for standardized parameter estimates. The model accounted for 3.2% of the variability in grade 1 anxiety scores ( $p=.03$ ), and 0.8% ( $p=.42$ ) of the variability in anxiety slope from grade 1 to grade 5, and 0.8% ( $p=.24$ ) of the variability in anxiety slope from grade 5 to age 15. The effect of  $FM_1$  on the intercept of child anxiety was significant ( $p<.01$ ), while the effect of  $MI_1$  on the intercept of child anxiety was not significant ( $p=.13$ ). However, the effect of  $MI_1 \times FM_1$  on the intercept of child anxiety was significant ( $p=.04$ ). Among families of lower  $FM_1$  (defined as  $>.5$  SD below the mean), maternal intrusiveness was associated with greater anxiety, but among families of higher  $FM_1$  (defined as  $>.5$  SD above the mean) it was not (see Figure 2). The effects of  $MI_1$ ,  $FM_1$ , and  $MI_1 \times FM_1$  on the slope of child anxiety from grade 1 to 5 and grade 5 to age 15 were not significant.

### Cross-Sectional Analyses at Grades 3 and 5

**Grade 3**—Table 3 presents the results of linear multiple regression analyses examining the main and interactive effects of maternal intrusiveness and financial means on child anxiety at grade 3. Maternal intrusiveness observed at grade 3 ( $MI_3$ ) significantly predicted child anxiety when entered as the sole predictor. The addition of grade 3 financial means ( $FM_3$ ) to the model significantly added to the prediction of child anxiety. Although the addition of the interaction term  $FM_3 \times MI_3$  added to the model's overall prediction of grade three child anxiety, the product term itself was not a significant predictor, indicating that the relationship between family  $FM_3$  and child anxiety in the third grade is uniform across levels of  $MI_3$ .

**Grade 5**—Table 4 presents the results of linear multiple regression analyses examining the main and interactive effects of maternal intrusiveness and financial means on child anxiety at grade 5. As in third grade, maternal intrusiveness observed at grade 5 ( $MI_5$ ) significantly predicted child anxiety in grade 5, and the addition of family financial means at grade 5 ( $FM_5$ ) added to the prediction of child anxiety. The addition of the interaction term  $FM_5 \times MI_5$  did not add to the prediction of child anxiety, indicating that the relationship between  $MI_5$  and child anxiety in the fifth grade is uniform across levels of family  $FM_5$ .

## Discussion

The present findings provide a rare statistical portrait of the complex relationships between maternal intrusiveness, family financial means, and child anxiety from early childhood through early adolescence in a large multiphase sample of U.S. community youth. Longitudinal analyses using latent growth modeling revealed that individual trajectories of change in child anxiety were stable from 1<sup>st</sup> to 5<sup>th</sup> grade, and then decrease from 5<sup>th</sup> grade to age 15. Cross-sectional analyses at key developmental time points revealed significant links between maternal intrusiveness and child anxiety that vary significantly as a function of family financial means, although early maternal intrusiveness did not prospectively impact the subsequent trajectory of child anxiety across childhood. Cross-sectional relationships found in this large national community sample between maternal intrusiveness and child anxiety are consistent with previous work conducted with smaller, clinic-based, and/or geographically restricted samples (McLeod et al., 2007). However, the present analyses revealed that the link between maternal intrusiveness and child anxiety varies as a function of time and of family financial means.

Across study time points, the link between maternal intrusiveness and child anxiety was strongest in 1<sup>st</sup> grade, particularly for lower-income families, and was less pronounced in subsequent years. Specifically, among 1<sup>st</sup> graders, the relationship between maternal intrusiveness and child anxiety was moderated by family financial means, but for 3<sup>rd</sup> and 5<sup>th</sup> graders family financial means did not moderate such a relationship and emerged as a stronger predictor of child anxiety than maternal intrusiveness in these later years. In 1<sup>st</sup> grade only, children with greater family financial means demonstrated lower levels of anxiety regardless of level of maternal intrusiveness, whereas among children with lower family financial means, children who experienced high levels of maternal intrusiveness displayed higher anxiety than those who experienced lower levels of intrusiveness. Findings suggest that at 1<sup>st</sup> grade, children from families with reduced financial means may be particularly susceptible to anxiety in general, as well as the specific association between maternal intrusiveness and child anxiety. Importantly, family financial means emerged as the only significant predictor of child anxiety in 3<sup>rd</sup> grade, regardless of level of maternal intrusiveness, and was no longer a significant predictor of child anxiety in 5<sup>th</sup> grade. Taken together these findings help elucidate for whom and when maternal intrusiveness has the greatest link with child anxiety.

The present findings highlight the shifting importance of various contextual influences on the maintenance of child anxiety across time. The present findings highlight the importance of parenting behavior and the financial environment in the maintenance of early childhood anxiety, but suggest other environmental influences may play a more important role as children develop. Such findings are consistent with Bronfenbrenner's ecological model of child development (1986), which characterizes shifting external forces that are linked with children's functioning and provide the contexts within which child development unfolds. Bronfenbrenner's model emphasizes how contextual influences vary in degree of proximity to the child, can be described as nested within one another, and influence one another over time to shape child development. The present findings suggest that early in childhood intrusive parenting environments in the child's microsystem interact with environments



external to the child's world (e.g., exosystems such as parental income), but as the child ages this interaction is less salient and other aspects of the child's environment (e.g., peer relationships, neighborhood safety, or other parenting behaviors) may play a more central role in child anxiety. Indeed, research shows that the development of adolescent emotional stability is more closely linked to relationships with peers rather than parents (Hay & Ashman, 2003), and relationships with anxious or deviant peers have been shown to be associated with anxiety among adolescents, particularly those living in unsafe neighborhoods (Nebbitt & Lambert, 2009; Van Zalk, Van Zalk & Kerr, 2011). Further, as the current model accounted for only up to 3% of the variance in child anxiety, other parenting behaviors associated with child anxiety, such as parental modeling, warmth, and hostile expressed emotion (Burstein & Ginsburg, 2010; Hale, Engels, & Meeus, 2006; van der Bruggen, Stams, Bögels, & Paulussen-Hoogbeem, 2010), may account for some of the unexplained variance in child anxiety. However, it is likely that these other parenting behaviors will explain relatively less variance in child anxiety, given that among parenting behaviors associated with child anxiety, autonomy granting consistently demonstrates the largest effects (McLeod et al., 2007).

Consequently, our findings highlight the importance of addressing maternal intrusiveness in the treatment of early child anxiety, particularly among low-income families. Indeed, evidence-based approaches to the treatment of early childhood anxiety have found success in efforts to reduce parental intrusiveness (e.g., Comer et al., 2012; Hirshfeld-Becker et al., 2010; Pincus et al., 2008; Rapee et al., 2010), whereas parent-focused efforts in the treatment of older youth with anxiety has not necessarily yielded improved outcomes relative to individual child treatment (e.g., Kendall et al., 2008). The present findings underscore the urgency of focused efforts to disseminate parent-focused child anxiety interventions for younger children from families of lower financial means.

Given that findings did not provide support for the roles of maternal intrusiveness or financial means in 1<sup>st</sup> grade predicting subsequent changes in anxiety, maternal intrusiveness appears to be more linked to the maintenance, rather than development, of child anxiety. Recent work evaluating the directionality of this relationship through the evaluation of genetic and environmental factors similarly suggest that high levels of intrusiveness are likely elicited by high child anxiety (Aschenbrand & Kendall, 2012; Hudson et al., 2008; Eley, Napolitano, Lau, & Gregory, 2010), which in turn may serve to maintain child anxiety. Other factors that may better account for changes in anxiety over the course of childhood may include early child temperament, parental anxiety, and stressful life events (Muris, van Brakel, Arntz, & Schouten, 2011).

Several limitations of the present work merit comment. First, measures of child anxiety were solely obtained through maternal reports of child anxiety. Although research supports the validity of parent reports of child anxiety (Brown-Jacobsen, Wallace & Whiteside, 2011; Manassis, Tannock, & Monga, 2009), it is possible that parents' awareness of unobservable symptoms of child anxiety may be limited (Comer & Kendall, 2004). Future work in this area would do well to incorporate multimodal assessments of child anxiety. Second, as child anxiety was assessed as a unitary construct in these analyses, it remains possible that maternal intrusiveness and financial means may differentially impact disorder-specific

anxiety symptom clusters across childhood. Future work should investigate such relationships to optimally inform the tailored treatment of specific anxiety disorders in childhood. Third, though from a large and geographically diverse sample, children in the NICHD SECCYD typically had mothers who displayed low levels of intrusiveness. Thus, the ability to detect differences in the development of child anxiety related to maternal intrusiveness in the present community sample may have been compromised by under representation of the more highly intrusive mothers who may typically present in treatment clinics. Fourth, the predominantly Caucasian make-up of the sample may limit the generalizability of findings to other racial groups. Finally, the generalizability of findings to all parents is limited, as the present analyses included only mothers. Consistent with theoretical work positing fathers play a unique role in the etiology of child anxiety (Bögels & Phares, 2008), a separate analysis of fathers' autonomy restricting parenting behavior in the NICHD SECCYD sample evidenced a divergent pattern with respect child anxiety (Cooper-Vince, Chan, Pincus, & Comer, 2013). Further work is needed to expand on these parenting differences and better understand specifically how different parenting roles (i.e., single parents, parents in same-sex relationships) may impact the relationship between parenting behavior and child anxiety.

Despite these limitations, the current findings provide a large, longitudinal portrait of the relationships between parental intrusiveness, financial means, and child anxiety across development in the community, and highlight the need to disseminate parent-focused treatments for early child anxiety, particularly to families of lower financial means. Such treatments coach parents to assume a less overprotective parenting posture by granting children more autonomy in age-appropriate situations and affording children gradual exposure to anxiety-provoking situations and their resolution. Future work is needed to investigate how other factors, such as peer relationships, neighborhood safety, and other parenting behavior may contribute to the development and maintenance of anxiety across childhood.

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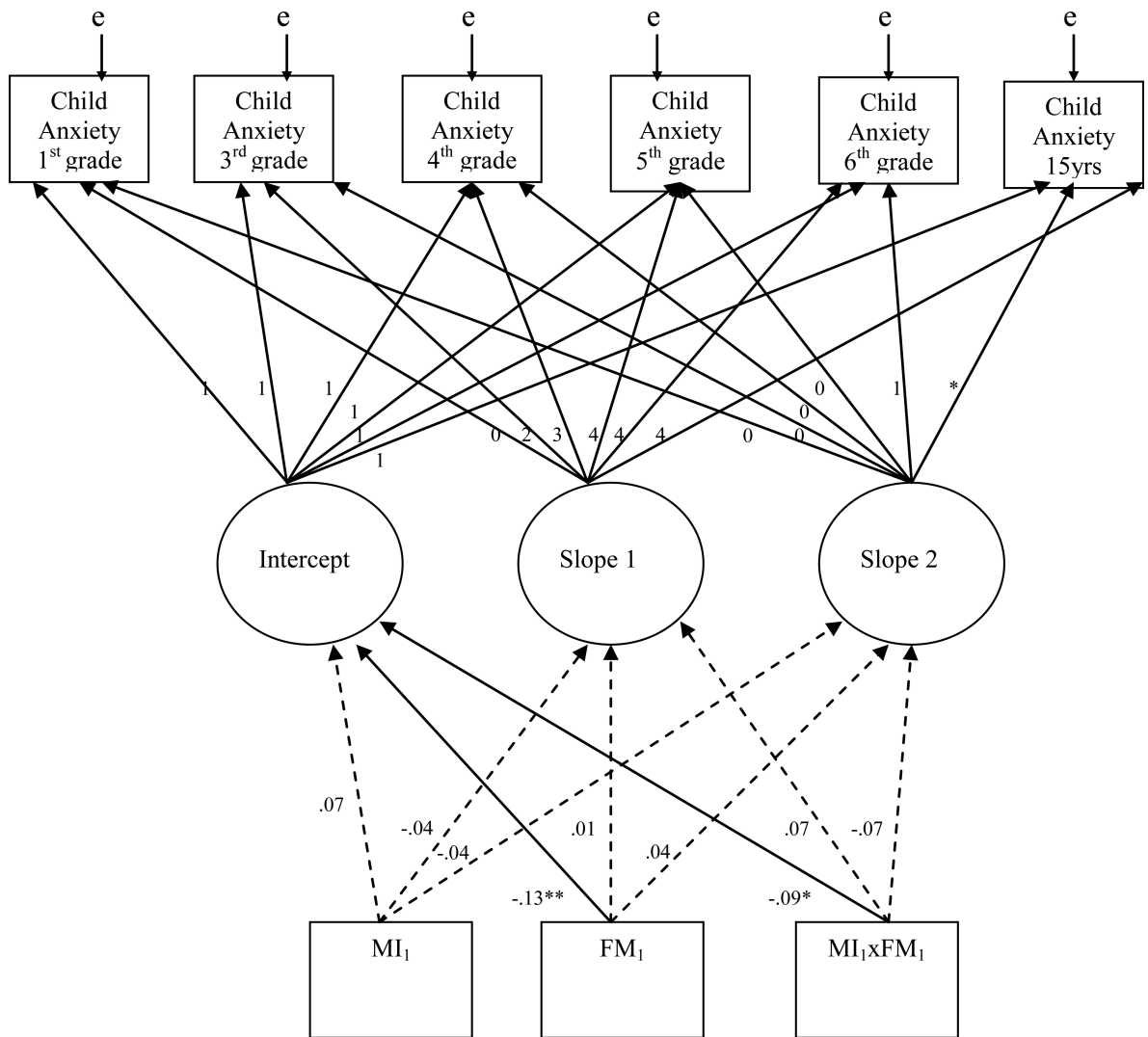
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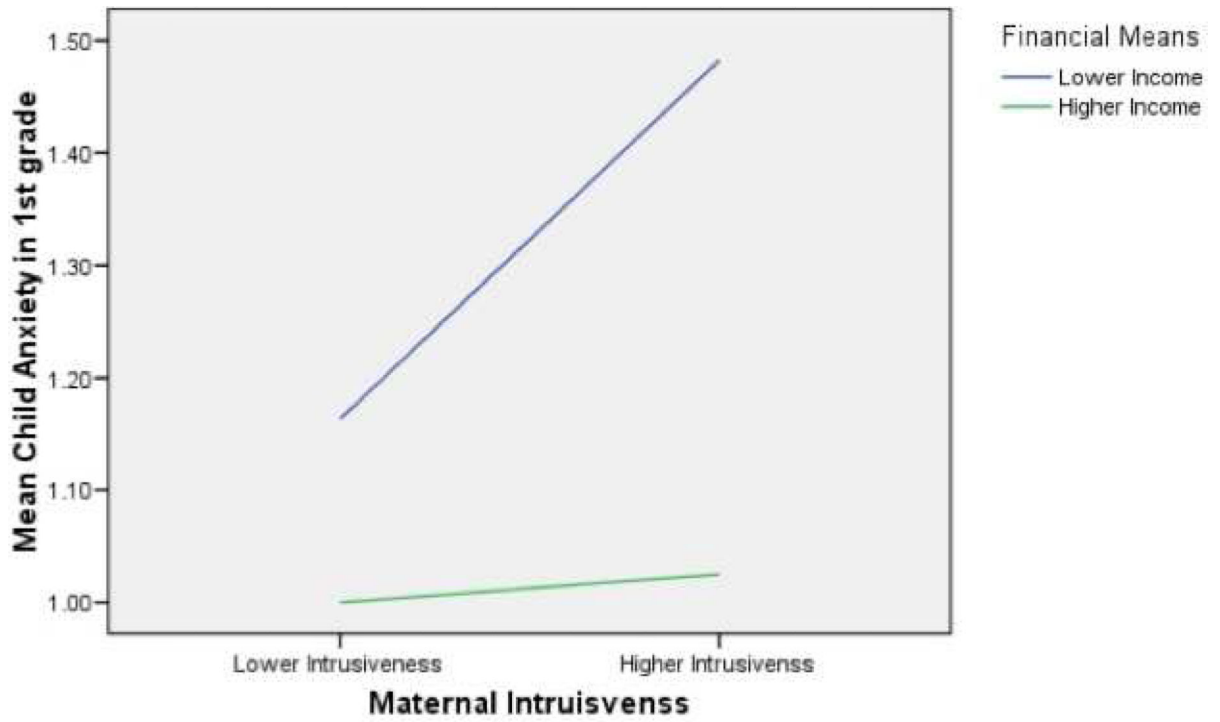


Note: \* =  $p < .05$ , \*\* =  $p < .01$

MI<sub>1</sub> = Maternal Intrusiveness in 1<sup>st</sup> Grade

FM<sub>1</sub> = Financial Means in 1<sup>st</sup> Grade

**Figure 1.**  
Conditional LGM for financial means and maternal intrusiveness.



**Figure 2.** Child anxiety in 1<sup>st</sup> grade as a function of maternal intrusiveness and family financial means.



**Table 1**

Means and standard deviations for observed variables across assessment time points

Variable	1 <sup>st</sup> grade	3 <sup>rd</sup> grade	4 <sup>th</sup> grade	5 <sup>th</sup> grade	6 <sup>th</sup> grade	Age 15
Child Anxiety	1.23 (1.44)	1.24 (1.56)	1.13 (1.53)	1.23 (1.61)	1.12 (1.58)	0.81 (1.32)
Maternal Intrusiveness	2.74 (1.16)	3.10 (1.03)	---	3.02 (.94)	---	---
Financial Means	3.95 (3.03)	4.40 (3.78)	---	4.54 (4.06)	---	---

*Note:* Standard deviations are presented in parentheses

**Table 2**

## Unconditional Latent Growth Model of Child Anxiety

Variable	Intercept	Intercept-Slope 1	Intercept-Slope 2	Slope 1	Slope 2	Slope 1-Slope2
Mean	1.22 <sup>***</sup>	---	---	-.00	-.11 <sup>***</sup>	---
Variance	1.21 <sup>***</sup>	---	---	.05 <sup>***</sup>	.08 <sup>***</sup>	---
Covariance	---	-0.01	-0.11 <sup>***</sup>	---	---	-0.02 <sup>**</sup>

Note:

<sup>\*\*</sup>  
p<.01<sup>\*\*\*</sup>  
p<.001

**Table 3**Multiple regression analysis predicting child anxiety in 3<sup>rd</sup> grade

<i>Variable Entered</i>	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>t</i>
<i>Step 1</i>				
MI <sub>3</sub>	.13	.05	.08	2.50 *
<i>Step 2</i>				
MI <sub>3</sub>	.07	.05	.05	1.40
FM <sub>3</sub>	-.05	.01	-.13	-3.67 ***
<i>Step 3</i>				
MI <sub>3</sub>	.06	.05	.04	1.17
FM <sub>3</sub>	-.06	.02	-.15	-4.05 ***
MI <sub>3</sub> ×FM <sub>3</sub>	-.03	.02	-.06	-1.73

Note: Step 1:  $R^2=.01$ ,  $F(1, 894)= 6.23$ ,  $p=.01$

Step 2:  $R^2=.02$ ,  $R^2=.02$ ,  $F(2, 893)= 9.88$ ,  $p<.01$

Step 3:  $R^2=.03$ ,  $R^2=.00$ ,  $F(3, 892)= 7.60$ ,  $p<.01$

\*\*=  $p<.01$

MI<sub>3</sub> = Maternal Intrusiveness in 3<sup>rd</sup> Grade

FM<sub>3</sub>= Financial Means in 3<sup>rd</sup> Grade

\*  $p<.05$

\*\*\*  $p<.001$

**Table 4**

Multiple regression analysis predicting child anxiety in 5th grade

<i>Variable Entered</i>	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>t</i>
<i>Step 1</i>				
MI <sub>5</sub>	.13	.06	.08	2.27*
<i>Step 2</i>				
MI <sub>5</sub>	.10	.06	.06	1.75
FM <sub>5</sub>	-.03	.01	-.06	-1.28
<i>Step 3</i>				
MI <sub>5</sub>	.10	.06	.06	1.65
FM <sub>5</sub>	-.03	.01	-.07	-1.94
MI <sub>5</sub> × FM <sub>5</sub>	-.01	.01	-.02	-.68

Note: Step 1:  $R^2=.01$ ,  $F(1, 855)= 5.15$ ,  $p=.02$

Step 2:  $R^2=.01$ ,  $R^2=.01$ ,  $F(2, 854)= 4.23$ ,  $p=.02$

Step 3:  $R^2=.01$ ,  $R^2=.00$ ,  $F(3, 853)= 2.98$ ,  $p=.03$

\*\*= $p<.01$ , \*\*\*= $p<.001$

MI<sub>5</sub> = Maternal Intrusiveness in 5<sup>th</sup> Grade

FM<sub>5</sub>= Financial Means in 5<sup>th</sup> Grade

\*  
 $p<.05$