
Socially competent self-regulation in young children has reduced the risk for persistent problem behavior, poor school adjustment, later truancy, delinquent behavior, and involvement in the juvenile/criminal justice system (Patterson & Yoerger, 1997). Children with better self-regulation have been found to have better mental health, abilities to deal with stressful events, academic achievement, and higher grades (Buckner, Mezzacappa, & Beardslee, 2009). While other environmental and biological characteristics contribute, parenting clearly influences children’s development of socially competent self-regulation (The NICHD Early Child Care Research Network, 1998). Parental disciplinary and limit-setting interactions with their children may provide particularly salient opportunities for children’s learning and internalization of self-regulatory competencies (LeCuyer, Swanson, Cole, & Kitzman, 2011; LeCuyer & Houck, 2006).

Literature suggests that African American (AA) families may use more authoritarian parental decision-making and disciplinary practices relative to European American (EA) families, and sometimes with less negative effects (Brody & Flor, 1998; Hill, 1995; McLoyd, Kaplan, Hardaway & Wood, 2007). However, constructs such as “authoritarian” and “authoritative” may be enacted and understood differently across different ethnic groups (Rudy & Grusec, 2006; Tamis-LeMonda, Briggs, McClowry, & Snow, 2008; Vinden, 2001), and little information is available on actual parental limit-setting strategies and their effects on children’s self-regulation in AA families.

In this paper, relationships between observed maternal limit-setting behaviors and children’s self-regulation are examined and compared in 50 AA and 66 EA mothers and their 36 month-old children. Children’s self-regulatory capacities were assessed through their observed behavioral responses to their mothers’ limit-setting in a laboratory, and by maternal-reported
self-concept and social competence across other settings. Children’s problem behavior was also assessed in the AA sample.

Comparison of children’s outcomes related to limit-setting strategies across ethnic groups may assist to identify important socio-cultural influences on parents’ goals and their strategies influencing children’s developing self-regulation. Identifying early normative patterns may also assist to describe goals for early intervention. This study focuses on early childhood (age 36 months), when limit-setting interactions are foundational for children’s later socio-emotional development, and when interactional patterns may be more amenable to intervention, before they become established and harder to change (NICHD, 1998; Patterson & Yoerger, 1997).

**Background**

Parents of all cultures enact limit-setting at least occasionally in order to protect their children from harm, or to prevent behavior that is undesired from the perspective of that culture (Forman, 2007). Early limit-setting and disciplinary interactions shape development of self-regulation by providing parameters and feedback regarding norms and standards the child must conform to within a particular cultural or ethnic context. Studies on discipline and limit-setting in AA families, however, often focus on physical discipline such as spanking rather than limit-setting behaviors more broadly (Lansford, Wager, Bates, Petit, & Dodge, 2012). A few studies have gathered information about other methods beyond spanking, but these were often based on parent reported behaviors or beliefs, revealing less about how parents actually behaved (Hill, 1995; Horn, Chen, & Joseph, 2004; Bluestone & Tamis-LeMonda, 1999; LeCuyer, Christensen, Kearney, & Kitzman, 2011; McLoyd et al. 2007; Tamis-LeMonda et al. 2008). Observational studies of parenting behavior and children’s self-regulation in AA families that do exist have been often conducted in settings other than discipline or limit-setting, such as play, snack, or other non-disciplinary tasks or routines (Garner, 2006; Tamis-LeMonda, Briggs, McClowry, & Snow, 2009; Whiteside-Mansell, Bradley, Tresch Owen, Randolph, & Cauce, 2003). While these interactions shed light on socializing processes important for self-regulation, less is known about
the influence of early limit-setting on children’s developing self-regulation in AA families.

**Limit-setting in AA and EA Mothers and Children**

Limit-setting is often characterized using constructs of authoritative and authoritarian parenting. Baumrind (1971) originally described these parenting constructs based on dimensions of responsiveness and control or “demandingness”. An authoritative pattern is characterized by both high responsiveness and high demandingness, and has been more consistently related to positive outcomes. An authoritarian pattern consists of low responsiveness and high demandingness, and has been generally associated with less positive outcomes (Baumrind, 1967, 1971, 1983; Maccoby & Martin, 1983; Tamis-LeMonda et al. 2008). However, much of that research was conducted in primarily EA populations. It has been proposed that authoritative and authoritarian constructs may be less applicable for other ethnic groups or social contexts, beyond those in which they were originally conceptualized (Hill, 1995; Horn, Cheng, & Joseph, 2004; Rudy & Grusec, 2006; Tamis-LeMonda et al. 2008). Several studies for example have found an authoritarian style associated with less negative or even positive outcomes in AA families (Horn, Joseph & Cheng, 2004; Lamborn, Dornbusch, & Steinberg, 1996). Baumrind (1972) herself found more positive outcomes in 3-4 year old AA girls associated with authoritarian parenting.

Other researchers, however, have found positive associations with authoritative parenting in AA families, and negative associations with authoritarian patterns (Smetana, 2000; Whiteside-Mansell et al. 2003). Tamis-LeMonda et al. (2008) noted that these discrepancies may be due to differing operational definitions of authoritative and authoritarian parenting. They recommended more precise definitions of parenting patterns based on specific parenting behaviors.

Consistent with these recommendations, an observational study of limit-setting in EA and AA mother-child dyads with 36 month-old children found that most mothers in both ethnic groups used an authoritative limit-setting pattern (56% of AA mothers, and 70% of EA mothers; LeCuyer, 2012). An authoritative pattern consisted of low to moderate maternal use of commands and directives, in the context of less-directive strategies including reasoning,
distractions, and sensitive support of their child’s autonomy. That report, however, did not address children’s outcomes of self-regulation. A second observational study with EA and AA mothers, again with 3 year-old children, found maternal authoritative limit-setting was associated with better observed self-regulation in both ethnic groups (LeCuyer, Swanson, et al. 2011). While that study observed children’s self-regulation in a laboratory setting, it did not address children’s self-regulation in settings outside the laboratory. This study presents findings on children’s self-regulation both observed in a laboratory setting, and assessed through maternal reported self-concept and social competence across other settings, representative of self-regulatory capacities.

**Self-regulation**

Self-regulation is a broad construct, consisting of a variety of cognitive and behavioral capacities. Together, these capacities enable individuals to adapt their behavior across a variety of situations in accordance with social norms and expectations, with less assistance from others (Chen, et al. 2003; Kopp, 1982; Calkins, 2007). In children, self-regulatory capacities will vary based on the age of the child, individual capacity, and demands of the social environment. The transition to self-regulation occurs most notably from the end of the first year of life until about age 5, with marked developments during the toddler period (Kopp, 1982, 2002). Parenting has been found to influence children’s development of self-regulation. While biological and cognitive maturation is important, socialization influences the social quality of self-regulation (Houck & Spegman, 1999). Given that normative social behavior may vary across cultures, socialization of self-regulation in children can be expected to vary also.

**Ethnicity and self-regulation.** From a contextual-developmental perspective, ethnic and cultural influences and values will guide parents’ socializing behaviors, which in turn will shape their children’s self-regulation (Chen & French, 2008; Chen, et al. 2003; Keller, Yovsi, Borke, Kartner, Jensen, & Papaligoura, 2004; Feldman, Masalha, & Alony, 2006). From this perspective, different cultural or ethnic groups may have different experiences, values, and
priorities for children’s behavior, which may lead to different socializing behaviors and outcomes. In accordance with this perspective, it is possible that the unique social heritage of African Americans in the US may result in different expectations and concerns for their children relative to families from other ethnic backgrounds (Cauce, Coronado & Watson, 1998). For example, LeCuyer, Swanson et al. (2011) found that maternal authoritarian attitudes were associated with positive limit-setting and children’s self-regulation in AA families. This is in contrast to evidence in EA families where authoritarian attitudes are generally related to less positive parenting and outcomes. The findings suggested that differences in outcomes of authoritarian perspectives may be adaptive, to some extent, for AA mothers’ nurturance and protection of their children in the context of greater demographic risk and perceptions of racism.

Children’s compliance. In very young children, self-regulation is often studied as compliance; more optimal compliance during toddlerhood has been described as a willing, autonomous adoption of their parents’ requests and directives (Kochanska, Coy, & Murray, 2001; Crockenberg & Litman, 1990). This has been termed committed or autonomous compliance, and includes children’s compliance with parental requests with relatively less parental cuing. In primarily EA samples this compliance has been related to a variety of positive outcomes, including less defiance and social competence (Crockenberg & Litman, 1990), children’s internalization of maternal requests and rules (Kochanska, 2002), children’s moral emotion and conduct (Kochanska, Forman, Aksan, & Dunbar, 2005), and in a multiethnic sample, fewer childhood injuries (Cole, Koulouglioti, Kitzman, Sidora-Arcolio, & Anson, 2009). Such compliance has been found to result from children’s transactions with their social environment, in particular parents’ responses to children’s self-assertions with lower-power strategies such as guidance and moderate controls (Crockenberg & Litman, 1990; Kochanska et al. 2001; LeCuyer, Swanson, Cole, & Kitzman, 2011).

Self-regulation and self-concept. Capacities that assist with self-regulation include cognitive, affective, and behavioral developments in young children’s self-concept, including an
awareness of the self within the social environment, self-awareness, and the capacity for self-monitoring. Parental approval and disproval of children’s behavior such as occurs during early limit-setting allows the child to develop the cognitive and affective capacities of their early self-concept, including self-conscious emotions and emotional awareness of wrongdoing, and an increasing ability to evaluate and monitor their attention, emotions, and behavior consistent with expectations from the social environment. Again while neurobiological maturation is important, the social environment influences early aspects of children’s self-concept important for self-regulation (Calkins, 2007; Houck & Spegman, 1999; Kopp, 1982; Lewis, 1997).

**Self-regulation and social competence.** The definition of self-regulation as a child’s ability to regulate his/her own activities in accordance with social norms emphasizes the role of socialization and implicates self-regulation as an integral part of social competence. It also underscores the importance of children’s learning more than just compliance to a request or prohibition. Socially competent self-regulation involves children’s ability to cease *and* initiate activities according to social norms or demands, including regulation of affect, regulation of the intensity, frequency, and duration of activity in social settings, avoidance of problem behavior, delay of satisfaction or action, and age-appropriate empathy, prosocial initiation, and self-assertion (Calkins, 2007; Forman, 2007; Houck & Spegman, 1999; Kopp, 1982; Maccoby & Martin, 1983).

**Socio-contextual influences on parental limit-setting behaviors.** Socio-contextual and demographic factors such as maternal age, education, and income have been found to influence parenting behaviors, and must be accounted for in order to more fully understand ethnic variation in parenting. Ethnicity is often confounded with socio-demographic status, however, because ethnic minority families are often over-represented in lower socio-demographic samples (Cauce, Coronado, & Watson, 1998; Hill, 1995). While the use of demographic covariates may not always satisfactorily address these confounds, a “cultural variance” perspective can assist by considering differences and similarities in parenting within the context of each group’s unique
values, history, and heritage (Cauce et al. 1998.) From this perspective, differences and similarities in parenting and children’s outcomes across varying demographic and ethnic contexts can provide evidence of positive and adaptive parenting strategies. For example, parents may develop unique sources of support and strategies for coping with risk factors related to demographics (e.g., neighborhood crime) and/or experiences of oppression due to their ethnic minority status.

**Purpose and Research Goals**

The first aim of this report examines ethnic differences in 36 month-old children’s self-regulation, accounting for demographic risk and children’s gender. Self-regulation was assessed by observing children’s compliance (responses to limits) in a laboratory setting, and by maternal reported children’s self-concept and social competence across other settings. The second aim was to determine whether ethnicity moderated the effects of maternal limit-setting patterns on those self-regulatory outcomes. For example, was authoritarian parenting related differently to children’s self-regulation (compliance, self-concept, social competence) in the two ethnic groups?

**Methods**

**Design and setting**

This study was descriptive and cross-sectional; all procedures were approved by the appropriate university research internal review boards. Mothers and children were recruited for laboratory observations and maternal-report measures in two separate studies. In Study 1, 66 EA mothers and children were recruited mainly from a western university-based family medical practice as part of a larger, longitudinal study (LeCuyer & Houck, 2006). Mothers and children participated in data collection at 8, 12, 24, 36, and 60 months of age; the 36 month data are described here, as representative of the early childhood period. As there were relatively few minority families in that geographic area, Study 2 recruited 50 AA mothers with 36 month-old children mainly from a pediatric practice in an eastern university-based medical center. Data
from Study 2 were collected only at 36 months.

**Sample.**

The overall sample consisted of 116 mothers with 36 month-old children (50 AA and 66 EA). All mothers self-identified as the primary care-provider for their child. This was corroborated in the AA sample through mothers’ self-reported hours of daily care (see Results). About 40% of both EA mothers and AA mothers reported their children attended daycare. Preschool data was not available for the EA children; only one AA mother reported her child attended preschool.

African American mothers were significantly younger, had less education, and had lower income-to-poverty threshold ratios (MANOVA $F(3,121) = 19.01, p \leq .001$; see Table 1). A covariate of demographic risk was included in all analyses (see Analysis). About two-thirds of mothers in each ethnic group had current partners (e.g., married, common law marriage, or living together; EA = 75%, AA = 78%); however 30% of EA mothers and 64% of AA mothers were single or never married.

There were also differences in children’s gender (Chi-square ($d.f. 1) = 17.98, p = .000$). The EA sample had more boys than girls ($n = 46 (70\%)$ versus $n = 20 (30\%)$), and the AA sample had more girls than boys ($n = 15 (30\%)$ versus $n = 35 (70\%)$). All statistical analyses included a covariate of children’s gender.

**Procedures**

In each study, mothers and their 36 month-old children came to an observational room for participation in interactions and provided questionnaire data. The rooms were sparsely but comfortably furnished similarly with carpeting, chairs, and a table; a see-through mirror was on one wall to allow observation and videotaping. The same age-appropriate “desirable object” was placed on the floor in front of the child, at least initially within their view and reach. The object was a brightly colored musical toy. The researcher instructed the mother to “Do what you would normally do at home to keep your child from touching or playing with the object,” and then left
the room. Interactions were videotaped and later coded. The large majority of toddlers were attracted to the object; the rare toddler who was not tended to be interested in other activities or objects such as the electrical sockets (fitted with safety caps). Thus there was adequate behavior relative to limit-setting for each dyad. Research staff collecting questionnaire data in Study 1 were EA, and in Study 2 were AA.

**Measures**

**Maternal limit-setting behaviors** were observed and coded using the Prohibition Coding Scheme-Revised (PCS-R). This measure has been described in depth elsewhere (LeCuyer, 2012; LeCuyer & Houck, 2006; LeCuyer-Maus & Houck, 2002). In summary, interactions between mothers and children during a 3-minute limit-setting task were observed and video-recorded. Recordings were later coded for specific behaviors. Maternal behaviors included: maternal commands, brief removal of children’s hands/feet from the prohibited object, physically holding the child, active engagement in distractions, distractions stated as commands, reconstruction of the meaning of the prohibited object (e.g., objective statements/discussion about more neutral aspects of the prohibited object, such as shape, color), reasoning, sensitive follow of the child’s autonomous interests or activities, sensitive acknowledgement of the child’s feeling state, and sensitive praise.

Following coding of the constituent behaviors, mothers were assigned to one of 4 limit-setting classifications, based on the observed quantity, quality, and balance of control strategies and sensitive-responsiveness expected to influence the development of self-regulation during that toddler age period (including affective tone, pacing, and developmental appropriateness; LeCuyer-Maus & Houck, 2002). The classifications were: indirect, teaching-based (authoritative), power-based (authoritarian), or inconsistent, and are reviewed briefly below.

**Maternal limit-setting patterns** (classifications) are defined as follows:

Mothers classified as *Indirect* in their limit-setting used distractions as their primary strategy, with less focus on the limit. While they generally had firm control which may have
included physical restraint, they used fewer, if any, commands.

Mothers classified as Teaching-Based (authoritative) were generally clear about the prohibition and used commands and directives, but spent relatively more time in less directive and responsive strategies such as reasoning, distractions, and sensitive follow of their child’s autonomy and interests. They seemed aware of their children’s developmental abilities, and focused more on assisting their child with self-control, with less focus on immediate compliance.

Mothers classified as Power-based (authoritarian) in their limit-setting relied on power assertions such as commands and directives, and focused mainly on their child’s immediate compliance. They used fewer less-directive and responsive strategies; distractions may have been developmentally inappropriate or less sensitive, and/or presented as commands without maternal participation.

Mothers classified as Inconsistent generally lacked contingent responsiveness. They were more inattentive and/or insensitive, and may have seemed unwilling, hesitant, or uncomfortable setting limits. Their strategies were often incongruent with the child’s behavior, with their own tone of voice, or not enforced.

**Toddler autonomous-compliance.** Children’s behaviors observed and coded were: persistence, follow, inhibition, and autonomy (including comfort-seeking and exploration; LeCuyer & Houck, 2002). Toddlers classified as autonomous-compliant may have persisted at times toward the prohibited object, but they also inhibited their approach to the object or showed evidence of processing the limit with some internalization, such as shaking their head or finger at the prohibited object, or saying “no, no”. They usually followed their mothers’ attempts to engage them; their autonomous activities did not exclude the mother and may have included calm discussion about the prohibited object or the limit itself.

**Interobserver reliability.** Behaviors were coded digitally using Noldus The Observer XT. Durations, or number of seconds that each mother and child spent in each particular
behavior were coded, yielding continuous data. Behaviors occurring as discrete events, such as commands, were coded in 2 second intervals; for example if a mother repeated three commands each occurring 2 seconds apart, the coding record indicated 6 seconds of commands. For the EA data (Study 1), coders were both EA females. Behavior reliabilities ranged from .62 to .99 ($m = .89$) at 36 months, with $kappa = .82$ for the classifications (LeCuyer & Houck, 2006). For the AA data (Study 2), coders were one EA female and one Dominican Republic female. Training was first conducted with videos of EA and AA mothers not in the study sample, and then 30% of the Study 2 AA sample was double coded. Intra-class correlations for the constituent behaviors ranged from .67 to .99 ($m = .88$). For the classifications, 60% of the AA sample were double-coded ($n = 30$) with a resulting Cohen’s $kappa = .85$ (LeCuyer, 2012).

**Validity.** An AA researcher with expertise in racial disparities and socio-cultural development reviewed the PCS-R behaviors and classifications, and verified them as appropriate for use with AA mothers and children (C. Porter, personal communication, April 2009; Porter & Barbee, 2004). Construct validity for the PCS-R was originally demonstrated in the longitudinal sample from which the EA sample for the current study was drawn. Children of mothers classified as teaching-based showed significantly better observed self-regulation (more autonomous-compliant responses to limits) in the laboratory setting and had more social competence and higher self-concept relative to sample means at 36 months, and also age-appropriate self-regulatory delay of gratification at age 5 (Houck & LeCuyer-Maus, 2002; LeCuyer & Houck, 2006). The modal toddler response-to-limits pattern at 36 months was autonomous-compliant (LeCuyer-Maus & Houck, 2002), representing more developed age-appropriate self-regulation. In the current sample, there were no differences in limit-setting patterns (classifications) between EA and AA mothers at 36 months, or in the distribution of patterns. An authoritative limit-setting pattern was the most common pattern in both ethnic groups (LeCuyer, 2012; 56% AA, 70% EA).
Children’s self-concept. The Self-Concept Questionnaire (SCQ; Stipek, Gralinski, & Kopp, 1990) describes four dimensions of self-competency important for developing self-regulation: self-description/evaluation, self-recognition, emotional response to wrong-doing, and autonomy. The mother rates 25 items on a 3-point scale to indicate whether her child displays a behavior (0 = definitely not, 1 = sort of, and 2 = definitely yes). Higher scores indicate greater development of self-concept. Alpha reliabilities for the SCQ were: AA $a = .78$; EA $a = .84$.

Children’s social competence. The Adaptive Social Behavior Inventory (ASBI; Hogan, Scott, & Bauer, 1992) has 30 items assessing toddler self-regulatory behavior in a variety of social situations. Behaviors are from three domains: prosocial expression, compliance, and disruptive behavior (Hogan et al. 1992). Using a scale of 0 (never) to 2 (often), the mother rates how often her toddler displays each behavior; higher scores indicate greater social competence and less disruption. Scale reliabilities in the current study were AA $a = .84$ and EA $a = .78$.

The Problem Behavior scale from the Brief Infant-Toddler Social and Emotional Assessment (BITSEA; Briggs-Gowan, Carter, Irwin, Wachtel, & Cicchetti, 2004) was introduced in the second study to further examine children’s social competence. Data on this measure was available for AA dyads only. Forty-nine items assessed 12-36 month-old children’s problematic social-emotional/behavior. Problem behaviors are impulsiveness, aggression, depression, eating problems, anxiety, negative affect, maladaptive behaviors, and clinical problems. On a scale of 0 to 2 (not true or rarely, to very true or often) or “no opportunity”, mothers rated their children’s specific behaviors within the last month. Total scale alpha reliability was .79 in the present sample.

Analysis

All analyses were conducted using SPSS 19 (SPSS, Inc). A cumulative demographic risk variable was created by converting maternal age, education, and income-to-poverty threshold scores to Z-scores, and summing the Z-scores into a cumulative score. This was to preserve power and because cumulative risk has been found to explain more variance in children’s
outcomes than individual risk factors (Gutman, Sameroff, & Eccles, 2002; Popp, Spinrad, & Smith, 2008). Lower cumulative risk scores reflected younger age, less education, lower relative income, and thus greater relative risk.

Due to the relatively small sample size for each ethnic group, the data was “bootstrapped” prior to analyses. Simple bootstrapping procedures select (re-sample) data points from the existing sample randomly and repeatedly (for the current study 1000 times), and then the statistic of interest is calculated. The bootstrapped set of values and statistics are considered more optimally representative of the population from which the sample was drawn (Chernick, 2011; Chen, 2007; SPSS, Inc). The results of bootstrapped analyses in these data were essentially identical to findings without bootstrapping, supporting the representativeness of the original data relative to the sampled populations.

**Research Aim 1** addressed ethnic differences in children’s self-regulation. For observed children’s responses to limits, a dichotomous variable was created indicating the presence or absence of an autonomous-compliant response-to-limits pattern in the laboratory setting. This variable was the dependent variable in a logistic regression, with ethnicity as the independent variable, and demographic risk and children’s gender as covariates. To determine whether there were ethnic differences in children’s self-concept and social competence, 2 separate ANCOVAs were conducted predicting those variables, again with ethnicity as the independent grouping variable, and demographic risk and children’s gender as covariates.

**Research Aim 2** determined whether ethnicity moderated the relationship between maternal limit-setting and children’s self-regulation. Separate regression analyses were conducted for each self-regulatory outcome. Logistic regression was used for children’s autonomous-compliant response-to-limits (dichotomous dependent variable). Ethnicity (also a dichotomous variable), a dummy-coded maternal limit-setting variable, and an interaction term (ethnicity X dummy coded maternal limit-setting variable), were entered as predictor variables.
with covariates of demographic risk and children’s gender. For self-concept and social competence, separate ANCOVAs were conducted with similar predictors. Given prior findings suggesting that authoritative and authoritarian patterns in particular may differ across ethnic groups, separate ANCOVAs were also conducted to examine whether ethnicity moderated effects of a maternal teaching-based or power-based classification on self-concept or social competence. Dichotomous teaching-based-or-not, and power-based-or-not variables were entered along with ethnicity and their interaction terms (teaching-based-or-not X ethnicity, and power-based-or-not X by ethnicity) in separate ANCOVAs predicting social competence, and self-concept, again with covariates of demographic risk and children’s gender. Significant interaction effects by ethnicity would allow examination of the two ethnic groups separately for effects of limit-setting patterns on children’s self-regulation. A lack of significant interaction would allow examination of effects of limit-setting on outcomes in the combined sample. ANCOVA’s were used to generate estimated means for self-concept and social competence.

Last, to examine maternal limit-setting strategies in relation to children’s problem behaviors, BITSEA problem scale scores (total and subscale scores) were regressed individually on maternal limit-setting patterns and behaviors, again controlling for demographic risk and children’s gender. Given the AA sample size of 50, effect sizes of greater than $r = .20$ are reported.

**Results**

Sample demographics are shown in Table 1. AA mothers had significantly more cumulative demographic risk than EA mothers (ANOVA $F(1, 114) = 31.03, p \leq .001$; standardized AA $m = -1.19, S.D. = 2.0$, EA $m = 1.11, S.D. = 2.3$). Their income-to-poverty threshold ratios were the most disparate, with the AA mean at poverty level, and the EA mean at nearly twice poverty level. Demographic risk and children’s gender were covariates in all analyses.

Data collected in the AA sample also included sources and hours of non-maternal care for
the child. AA mothers provided an average of 19 hours of daily care for the target child ($S.D. = 4.5$). Non-maternal care providers included immediate family or extended family members ($n = 27; m$ hrs $= 5.5; S.D. = 8.6)$, boyfriend or non-marital partners ($n = 14; m$ hrs $= 3.03; S.D. = 6.5$), and daycare ($n = 20; m$ hours $= 3.17; S.D. = 4.23$).

**Aim 1: Ethnic differences in children’s self-regulation**

Controlling for gender and demographic risk, there were no ethnic differences in observed children’s autonomous-compliant responses to limits classifications (Table 2; bootstrap logistic regression interaction chi square ($df 4, n = 116) = 5.2; p = .27$). An autonomous-compliant response to limits classification was modal in both ethnic groups (AA $= 50\%$; EA $= 61.5\%$). Demographic risk also was associated with more autonomous-compliant responses to limits ($B = .31; p \leq .01$), and gender did not have an effect.

The overall ANOVA for ethnic differences in self-concept did not quite reach significance, controlling for demographic risk and children’s gender (Table 2; bootstrap ANOVA $F (3, 112) = 2.52, p = .062$). Demographic risk was also not a significant contributor to self-concept. When not controlling for demographic risk, however (retaining gender), the overall model for self-concept was significant, with lower self-concept in AA children (bootstrap ANOVA $F (2, 114) = 5.02, p = .033$); ethnicity $F (1,113) = 6.92; p = .01$; AA $m = 39.58, S.E. = 1.0$; EA $m = 43.22, S.E. = .87$). Together these findings indicate that there are likely other factors represented by ethnicity and/or demographics that influence self-concept, that are not measured or accounted for in these data.

For social competence (Table 2), the overall ANOVA was significant but ethnicity did not contribute (overall $F (3, 112) = 5.75, p \leq .001$; univariate ethnicity $F (1, 112) = 0.22, p = .64$). Effects were significant for both demographic risk ($F (1, 112) = 11.49, p \leq .001$) and children’s gender ($F (1, 112) = 5.38, p \leq .05$). Without demographic risk, social competence also did not differ by ethnicity (ethnicity $F$ without risk $(1,113) = .118, p = .28$). In the entire sample controlling for risk, girls demonstrated more social competence than boys.
Social competence and self-concept covaried in the EA sample \( r = .30, p = .014 \), but not in the AA sample \( r = .17, p = .24 \).

**Aim 2: Ethnic differences in the effect of limit-setting on children’s self-regulation.**

Research Aim 2 examined whether ethnicity moderated the effect of maternal limit-setting patterns on children’s self-regulation. For children’s observed autonomous-compliant responses to limits, interaction effects by ethnicity did not reach significance, either across all four maternal limit-setting classifications (interaction Chi square \( d.f. 3, 116 = 5.2; p = .16 \)), or for mothers dichotomously classified as teaching-based or not (interaction Chi square \( d.f. 1, 116 = 1.6; p = .20 \)), or power-based or not (interaction Chi square \( d.f. 1, 116 = .71; p = .40 \)).

Examining the combined sample in both ethnic groups, maternal limit-setting significantly differentiated children’s autonomous-compliant responses to limits (Chi square \( d.f. 3, 116 = 34.3; p \leq .001 \)). A maternal teaching-based limit-setting pattern was positively associated with children’s autonomous-compliant responses to limits (bootstrap logistic regression Chi-square \( d.f. 5, n = 116 = 43.95 \); teaching-based \( B = 3.35, p \leq .001 \)), as was lower demographic risk \( B = .31, p \leq .01 \).

Ethnicity also did not moderate the effect of the maternal limit-setting classifications on children’s self-concept, (overall bootstrap ANCOVA \( F (9, 106) = 3.14, p \leq .01 \); interaction by ethnicity \( F (3, 106) = 1.45, p = .23 \)), including when looking at mothers dichotomously classified as teaching-based or not (bootstrap interaction \( F (1, 110) = .002, p = .97 \)), or power-based or not (bootstrap interaction \( F (1, 110) = 2.3, p = .13 \)). In the combined sample, maternal limit-setting patterns significantly associated with children’s self-concept (bootstrap ANCOVA \( F (5, 110) = 4.05, p \leq .01 \); limit-setting patterns \( F (3, 110) = 5.51, p \leq .001 \)). Contrasts revealed that a teaching-based pattern was associated with children’s more developed self-concept \( m = 42.8, S.E. = .76; p \leq .001 \), and an indirect classification was associated with diminished self-concept \( m = 32.4, S.E. = 2.5; p \leq .001 \), relative to the overall sample mean \( m = 39.4, S.E. = .85 \), similar to findings in an earlier study with a larger primarily EA sample (LeCuyer & Houck, 2006).
Demographic risk only neared significance (bootstrap ANCOVA $F(1, 110) = 3.68, p = .06$) and gender was not a significant contributor ($p = .73$).

Ethnicity also did not moderate the effect of limit-setting classifications on social competence (overall bootstrap ANCOVA $F(9, 106) = 3.48, p \leq .001$; interaction by ethnicity $F(3, 106) = 1.96, p = .12$); only demographic risk predicted social competence (ANCOVA $F(1, 106) = 3.68, p \leq .001$). Effects of a power-based classification were also not moderated by ethnicity (interaction ANCOVA $F(1, 110) = 1.6, p = .21$). However, examining mothers classified as teaching-based or not, ethnicity did moderate the effect of teaching-based limit-setting on social competence (bootstrap overall ANCOVA $F(9, 110) = 4.56, p \leq .001$; interaction by ethnicity $F(1, 110) = 4.5, p \leq .05$). Examining only EA dyads, children with mothers using teaching-based limit-setting had significantly more social competence relative to the EA sample mean (overall $F(5, 60) = 2.8, p \leq .05$; teaching-based $m = 75.74, S.E. = .80; p \leq .006$; sample $m = 72.5.0, S.E. = .72$). EA children with indirect limit-setting had children with diminished social competence ($m = 67.23, S.E. = 2.73; p \leq .001$), similar to prior published findings (LeCuyer & Houck, 2006). Neither demographic risk nor gender significantly contributed. For AA dyads however, limit-setting was not related to social competence (overall $F(5, 44) = 4.9, p \leq .001$; limit-setting $F(1, 46) = 1.20, p = .28$). Instead, demographic risk predicted AA children’s social competence, with less risk related to greater competence ($F(1, 44) = 18.1, p \leq .001$). Gender did not contribute significantly ($F(1, 44) = 3.21; p = .084$).

Examining AA children’s problem behavior (BITSEA), as expected AA children’s total problem behavior scores were negatively associated with social competence ($R^2 = .34, \text{Beta} = -.63, p \leq .001$); neither demographic risk or gender contributed (Betas = -.10, .002). Total problem behavior scores were not related to maternal limit-setting classification, however, specific problem behavior subscales were related to specific maternal limit-setting behaviors. Maternal physical holding during limit-setting was negatively associated with children’s anxiety and impulsivity (anxiety $R^2 = .09, \text{Beta} = -.28, p = .059$; impulsivity $R^2 = .112, \text{Beta} = -.32, p \leq .001$).
Maternal praise was related to less aggression \( (R^2 = .12, \text{Beta} = -.30, p \leq .05) \), and maternal reconstruction of the meaning of the prohibited object was related to less negative emotionality \( (R^2 = .09, \text{Beta} = -.27, p = .07) \) and fewer eating problems \( (R^2 = .15, \text{Beta} = -.38, p \leq .01) \). All of these specific problem behavior subscales also individually predicted children’s lower social competence, after accounting for demographic risk and gender \( (R^2 \text{ range } .38 - .50, \text{Beta's} -.28 \text{ to } -.46, p's \leq .01) \).

Examining whether other caregivers may have influenced children’s self-regulation, neither social competence nor self-concept were related to sources or hours of non-maternal child care. These other sources of care reported by mothers included friends, family members, non-partnered biological fathers, boyfriends, and day care.

**Summary of results.** There were no ethnic differences in children’s self-regulation, including observed children’s responses to limits, and maternal rated children’s self-concept and social competence. In both ethnic groups, a maternal authoritative (teaching-based) pattern was related to better children’s self-regulation assessed as autonomous-compliant responses to limits, and children’s self-concept. An indirect limit-setting pattern was related to diminished children’s self-concept.

Regarding social competence, however, maternal limit-setting patterns did not significantly differentiate AA children’s social competence. While EA children who experienced teaching-based limit-setting had better social competence relative to the EA sample mean, AA children whose mothers were teaching-based did not differ in their social competence from other AA children. Only less demographic risk predicted better social competence in AA children.

Examining social competence in terms of children’s *problem behaviors* however, maternal limit-setting behaviors measured by the PCS-R did predict AA children’s problem behavior. African American mothers who physically held their children less, and who used less praise and less reconstruction of the meaning of the prohibited object had children with greater child aggression, impulsivity, negative emotionality and/or more eating problems. Those problem behaviors were
also negatively associated with social competence.

**Discussion**

The findings from this sample of 50 AA and 66 EA mothers and their 36-month-old children demonstrate many similarities but some ethnic differences in how mothers’ limit-setting influenced their children’s developing self-regulation. After accounting for demographic risk and children’s gender, children’s self-regulation did not differ by ethnicity, either as observed in a laboratory setting, or as rated by mothers across other settings. Also in both ethnic groups, an observed authoritative (teaching-based) maternal limit-setting pattern was positively associated with better observed children’s self-regulation, and children’s self-concept. These findings underscore the benefits of an authoritative limit-setting pattern with 36 month-old children in both ethnic groups, similar to findings of LeCuyer, Swanson, et al. (2011). An indirect limit-setting pattern was associated with children’s less-mature observed self-regulation and less-developed self-concepts, also consistent with earlier findings (LeCuyer & Houck, 2006).

A socio-emotional and organizational model of development describes children’s sense of self, or self-concept, as emerging based on their experiences in interactions with caregivers (Calkins, 2007; Houck & Spegman, 1999; Sroufe, 1990). Within these social experiences, children can become increasingly self-aware, and develop an inner organization that allows for self-description, self-evaluation, and an emerging sense of wrong-doing, in conjunction with increasingly internalized standards and norms (Sroufe, 1990, 1995; Forman, 2007). From this theoretical perspective, an authoritative combination of clear limits along with responsiveness and guidance contributed to development of self-concept in both AA and EA children in this study. An indirect maternal limit-setting pattern, however, characterized mainly by distractions with less clarity about limits, appears to offer a more limited range of maternal strategies with fewer opportunities for children’s development of cognitive and affective capacities for self-regulation at age 36 months.

Regarding social competence, however, maternal limit-setting was not related to social
competence in AA children. In the EA sample, limit-setting predicted social competence similarly to self-concept; an authoritative pattern was positively associated, and an indirect pattern was negatively associated with social competence. Only demographic risk influenced social competence in the AA group, however, with higher-risk children showing less competence.

Other studies have also found a lack of association between authoritative parenting constructs and young AA children’s social competence (Fagan, 2000; McWayne, Owsianik, Green, & Fantuzzo, 2008; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). Factors contributing to this lack of association may include the influence of broader kinship or social networks on AA children’s outcomes, the influence of social desirability on maternal ratings of social competence, and/or a lack of understanding of what constitutes good parenting or developmentally supportive parenting constructs in populations not traditionally studied (McWayne et al. 2008). Parenting from extended kinship or social networks, however, did not appear to influence AA children’s social competence in this study. While all AA mothers identified themselves as primary care providers for their child, about half of them also reported their child received some care from extended family, husbands, partners, or day care. These non-maternal sources of care, however, did not meaningfully explain variance in social competence (or self-concept) in AA children. The influence of non-maternal caregiving on social competence may perhaps be more influential in families which rely more heavily on other care providers; or such influences may be diffused so that their specific effects on children remain undetermined (McWayne et al. 2008).

Social desirability may also play a role. Low-income AA mothers have been reported to especially value young children’s behavioral compliance, for example to protect their children from unsafe neighborhoods or from racially inequitable treatment (Fagan, 2000; Horn, Cheng, et al. 2004; Kelley et al. 1992; McWayne et al. 2008). African American mothers may also be concerned that their children or their parenting may be judged more harshly if their children are not behaving within certain standards of what is acceptable. The social competence measure used in this study contained many statements addressing children’s compliance and manners, such as
“says please and thank-you”, or “is obedient and compliant”, or “is bossy, needs to have his or her way”. It is thus possible that social desirability may have influenced maternal reports of children’s social competence. The self-concept scale, in contrast, included more neutral items (“uses the word me”, “communicates likes and dislikes verbally”, “recognizes himself/herself in pictures”). However, AA children’s problem behaviors were related negatively to social competence, which offers some support for validity of the social competence measure. Problem behaviors also associated negatively with limit-setting behaviors characteristic of an authoritative pattern.

Alternatively, existing research may provide an inadequate or limited understanding of what constitutes good parenting in relation to what is valued as social-competence for young children in AA populations (McWayne et al. 2008). Parenting patterns and behaviors may not necessarily relate to parents’ goals or children’s outcomes in the same way across ethnic groups (Sorkhabi, 2005). Lower-income AA parents’ preference for children’s behavioral compliance in the context of unsafe neighborhoods or racially inequitable treatment may result in valuing social competence based less on empathy for others, and more on a concern for safety. Social competence from this perspective may emphasize behavioral control, compliance, and appropriate manners, to maintain positive relationships and reduce problematic interactions (Crittenden, 2006, 2012) and may perhaps vary across social settings.

Some evidence of socio-cultural contributions to social competence may be found in specific limit-setting behaviors. While the limit-setting patterns did not differ significantly between these 2 ethnic groups, as a group these AA mothers physically held their children more during limit-setting relative to EA mothers (LeCuyer, 2012). More physical contact between parents and children has been found in sociocentric/collective cultures relative to individualistic cultures, including during limit-setting (Feldman, Masalha, & Alony, 2006; Keller, et al. 2004). More parent-child body contact may help these children regulate negative affect and to accept and internalize prohibitions, in accordance with more closeness and a more hierarchical emphasis on authority found in many socio-centric societies (Feldman et al. 2006). AA families
have been described as both individualistic and socio-centric (Oyserman, Coon, & Kemmelmeier, 2002), however one hypothesis is that increased physical holding during early limit-setting may provide additional support for children’s regulation of affect and acceptance of rules and standards consistent with social competence in AA families.

Although social competence was not related to limit-setting in the AA sample, these data did not show any negative effects of authoritative limit-setting for AA children. Most AA mothers (56%) in this sample enacted limit-setting strategies consistent with an authoritative pattern, supporting its normative status in this population (LeCuyer, 2012). An authoritative pattern was associated with children’s more optimal observed self-regulation, similar to findings of LeCuyer, Swanson et al. (2011), and with children’s more developed self-concept. There were also no negative effects from an authoritarian pattern in either ethnic group, again similar to findings from the larger primarily EA sample at 36 months. In that study, the negative effects of an authoritarian pattern were not seen until age 4-5 when those children showed markedly diminished self-imposed delay of gratification (LeCuyer & Houck, 2006). Therefore, these findings help to substantiate that a maternal authoritative limit-setting pattern is normative and at least somewhat beneficial for children’s development of self-regulation in both EA and AA mother-child dyads at 36 months.

Limitations and need for further research.

The higher percentage of girls in the AA sample and boys in the EA sample suggests that gender was to some extent confounded with ethnicity. While few studies provide data about gender effects on children’s development in AA families, in general young girls score higher than young boys on social competence, including in this study (Briggs-Gowan, et al. 2004). While gender did not predict limit-setting, further study may be helpful to assure that differences related to gender and limit-setting were not missed.
Another limitation is that mothers were not asked whether they used other physical disciplinary strategies in this study. Evidence indicates that AA mothers’ may have greater acceptance of non-abusive physical strategies such as tapping their children’s hands or spanking, and that they may utilize such strategies within overall positive and supportive relationships, including in the context of authoritative parenting styles (Deater-Deckard & Dodge, 1997; LeCuyer, Christensen, et al. 2011; McLoyd et al. 2007; McLoyd & Smith, 2002). Data about mothers’ use of a wider range of physical limit-setting strategies during limit-setting, including physical holding, may assist to further describe limit-setting patterns and children’s behavioral outcomes in both ethnic groups. Longitudinal study may also be useful, beginning earlier in childhood (LeCuyer, Swanson, et al. 2011) when interactive patterns are first established.

An additional limitation is that mothers (both EA and AA) were the only source for social competence ratings. Peer interactions can provide valid assessments of social competence but may be difficult to arrange, especially with very young children who are in not in formal daycare or preschool settings (Garner, 2006; Webster-Stratton & Lindsey, 1999). Development and validation of assessments of social competence and self-regulation are needed for use with very young children, and in other ethnic groups. Observations of early social connectedness and initiative, such as through measures of attentional control, for example, may provide information about early development of social competencies in both EA and AA children. Qualitative study of parents’ values and expectations for social competence in young children in varying socio-ethnic contexts may also be helpful (Tamis-LeMonda et al. 2008).

A final limitation includes the selection and demographic differences between the two ethnic samples, and in relation to broader populations. The AA mothers were recruited for a study about AA parenting, which may have attracted mothers more confident about their own parenting and/or their children’s behavior. The EA mothers and children had attended all data collection points in a longitudinal study for over 5 years and likely represented an especially motivated group of mothers. As a group, however, AA mothers were younger, had less
education, and less income than the EA mothers, with higher cumulative risk. Income was the most disparate, as AA mothers’ economic status was at poverty level and EA mothers’ was at twice poverty level. These data therefore cannot be said to represent limit-setting in lower-risk, higher-income AA families, or in higher-risk, lower-income EA families. However, given these sample differences, the similarities in limit-setting and children’s outcomes provide reassuring evidence of the normative use and benefits of an authoritative limit-setting across demographic levels in these 2 ethnic groups.

These findings also suggest adaptation and resilience in the AA sample. Further research on sources of adaptive resilience in higher-risk AA parents from a culturally variant perspective is needed. Other factors that may be related to, but not the same as, ethnicity and/or demographic risk need to be articulated and included in research designs for a fuller understanding of parenting and children’s self-regulation in different ethnic groups. Such factors may include neighborhood violence, substance use, and community supports. Sources of resilience may occur through personal beliefs and attitudes about parenting and children’s development, and/or religious and family affiliations (Cauce, et al. 1998; Brody & Flor, 1998; Suizzo, Robinson, & Pahlke, 2008; Tamis-LaMonda et al. 2009). Racial socialization, racial identity, and positive coping in a context of racism have also been related to fewer problem behaviors and more competence in AA pre-school children (O’Brien Caughy, O’Campo, Randolph, & Nickerson, 2002; Halgunseth, Ispa, Csizmadia, & Thornburg, 2005; Marshall, Jones, Wilkins, & Izard, 2012). Further research from a contextual-developmental perspective (Chen & French, 2008) may provide needed insights into these and other adaptive factors related to limit-setting and parenting during early childhood, in the context of higher demographic and socio-cultural risk.

Conclusion

Overall, these data demonstrate both similarities and differences in relationships between mothers’ limit-setting and children’s capacities for self-regulation among AA and EA mothers and their 36 month-old children. An observed authoritative maternal limit-setting pattern was
associated with better observed children’s self-regulation, and more developed children’s self-concepts, in both ethnic groups. An observed authoritative maternal limit-setting pattern was also associated with better children’s social competence in the EA sample, but was unrelated to social competence in the AA sample. While further research is needed to more fully understand the influence of limit-setting patterns for AA children’s social competence, these findings offer further support for the benefits of authoritative limit-setting during early childhood in AA families as well as EA families, for children’s developing self-regulation.
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