

# Longitudinal Association Between Parenting Practices and Early Sexual Risk Behaviors among Urban African American Adolescents: The Moderating Role of Gender

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**Abstract** A sample of 274 African American families, living in impoverished neighborhoods with high HIV rates, participated in a longitudinal study of adolescent sexual development when children were in the 4th or 5th grade. Self-report and observational measures of parental warmth and parental behavioral control were collected from adolescents and parents at Time 1, and youth reported if they had initiated intercourse at Times 1 and 2. Regression analyses suggested that gender moderated associations between parental behav-

ioral control and engagement in adolescent sexual behaviors. More generally, findings suggested that boys reared in low control/high warmth (i.e., permissive) homes and girls reared in high control/low warmth (i.e., authoritarian) homes were particularly at risk for early sexual behaviors. Clinical implications and directions for the future research are discussed.

**Keywords** African American adolescents · Sexual behaviors · Parenting

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Adolescents are a population at risk for HIV infection, largely because of early sexual activity, failure to use condoms consistently, multiple sex partners, and high rates of sexually transmitted diseases (Kotchick *et al.*, 2001; Lynch *et al.*, 2000; Meschke *et al.*, 2000). HIV transmission among teens occurs primarily through sexual activity, with 57% of males and 49% of females infected through sexual contact but only 8% of males and 11% of females infected through intravenous drug use (CDC, 2000).

In recent years, there has been substantial literature examining the factors associated with adolescent sexual behavior. Studies have shown that parenting practices and the quality of family relationships are related to adolescent sexual risk taking behaviors such as early sexual debut, having multiple partners and condom use (Kotchick *et al.*, 1999, 2001; Meschke *et al.*, 2000; Miller *et al.*, 2000, 2001; Taylor-Seehafer and Rew, 2000). Parental warmth and behavioral control have been consistently associated with delayed sexual initiation and less risky sexual behaviors (Jaccard *et al.*, 1996; Miller *et al.*, 2001; Resnick *et al.*, 1997; Rodgers, 1999). However, most studies have been conducted with White, middle class, two parent families who appear to be at less risk for the negative consequences of sexual risk taking behavior than ethnic minorities. Moreover, most past studies have been cross-sectional rather than longitudinal, thus

undermining the degree to which temporal associations between predictors and sexual outcomes could be examined. Few studies have sought to understand the relationship between parenting practices and adolescent sexual behaviors specifically in low-income African American families living in urban neighborhoods. We were particularly interested in the impact of these parenting practices because many studies have found that parental warmth coupled with control foster children's healthy development (Steinberg *et al.*, 1991).

African Americans have emerged as a high-risk group for HIV due to an earlier onset and higher rate of intercourse than Caucasian, non-Hispanic adolescents (CDC, 2005). Research findings indicate ethnic differences in progression from earlier sexual experiences to intercourse, with African American youth likely to progress from kissing and petting directly to intercourse. On the other hand, White youth may progress to intercourse after extensive sexual behaviors such as kissing and petting over time (Brooks-Gunn and Paikoff, 1993). Additionally, findings suggest links between other heterosocial behaviors (i.e. playing running and chasing games where boys chase girls or vice versa) and intercourse for urban African American pre- and young adolescents. Specifically, playing hugging and kissing games is more associated with exposure to sexual intercourse than kissing or petting, most likely due to the higher frequency of occurrence of playing these games among African American adolescents (Brooks-Gunn and Paikoff, 1993). Therefore, it is important that research on sexual behaviors in African American adolescents not only examine sexual intercourse as a single outcome but also a broader range of sexual behaviors such as kissing, touching, and petting.

The current study utilizes a longitudinal design to examine associations between parenting practices and early sexual risk behaviors among low-income African American adolescents. We investigate the role of these parenting factors after taking into account adolescent AIDS knowledge, since it has been demonstrated consistently that simple knowledge of HIV and AIDS transmission is necessary but is not sufficient in influencing adolescents' sexual practices (Fisher and Fisher, 1992). Lastly, this study examines whether gender moderates associations between parenting factors and adolescent sexual risk behaviors.

#### Parenting in African American families

In the past 20 years, research on parenting in African-American families has taken a culture-specific perspective and socialization of children has been examined in the context of African-American culture. African-American parent-child interactions have been characterized as placing special emphasis on strong family ties, attachment, loyalty to parents and community and extended kin networks (Cauce *et al.*, 1996; Hatchett and Jackson, 1993). Autonomy and

attachment have been found to be salient characteristics during adolescence and within African American culture. African-American parents face an enormous challenge in child-rearing as they must be able to teach their children necessary survival skills that will prepare them to function in a society characterized by racism and economic oppression. Historically, African-American parental control and disciplinary practices have been characterized as comparatively more harsh and authoritarian than mainstream practices (Baumrind, 1972). However, in actuality, the disciplinary practices of Black parents have been shown to be appropriate strategies, given conditions in which many African American youth are reared (Cauce *et al.*, 1996).

Researchers in the field of adolescent development have concluded that a major social task of adolescence is to develop autonomy from parents while simultaneously maintaining an appropriate degree of attachment in the family (Hill and Holmbeck, 1986). Although different aspects of autonomy have been identified, the development of behavioral autonomy, or the ability to make independent decisions has received increased attention (Smetana *et al.*, 2004; Steinberg, 1990; Zimmer-Gembeck and Collins, 2003). However, the extent to which African American parents support adolescent's autonomy development is relatively unclear. Some researchers have used the term "precision parenting" to describe the difficulty African-American parents face in supporting their child's desire for autonomy while protecting them from the dangers of high-risk neighborhoods (Cauce *et al.*, 1996). In fact, research suggests that parent unilateral decision making may protect adolescents in urban high-risk neighborhoods (Kelley *et al.*, 1992).

#### Parenting and child outcome: The moderating role of gender

Research on the moderating role of gender for associations between parenting practices and child outcomes have found contrasting results in studies of children and adolescents. A meta-analysis found that marital conflict, divorce and poor parenting are more strongly associated with the development of externalizing problems among boys than girls (Rothbaum and Weisz, 1994). In contrast, studies have found that negative parenting practices and marital discord predict increases in adolescent females' externalizing behaviors compared with males (Scaramella *et al.*, 1999; Werner and Silbereisen, 2003). Socialization literature suggests that parents use different parenting strategies with their children and parents may exert more control over girls than boys (Cross and Madson, 1997). Beginning in early adolescence, gender-differentiated socialization processes emerge which function to shape gender-appropriate behavior of boys and girls. In African American inner city communities, it may be appropriate to exert high levels of control on boys since studies

suggest that poor minority male adolescents are at greatest risk for serious involvement with gangs and victims of violent crime (Gorman-Smith *et al.*, 1996). However, this style of parenting may inhibit the development of independence and increase the level of conflict among African American girls. At a young age, African American girls may carry considerable responsibility for the care of the family at home, with such girls demonstrating considerable social maturity and a wide range of adaptive behaviors. Higher levels of parental control conflict with such high levels of maturity thus producing negative child outcomes for girls. Such speculation, based on past work is tested empirically in the present study.

#### Parenting and adolescent sexual behavior

Parents play important roles in preventing early sexual activity through both the nature and quality of their relationships with their children and through their specific behavior toward them (Miller *et al.*, 2001). They can provide their children with necessary information and values as well as directly limit or control their opportunities for sexual relations. More generally, healthy psychological development appears to be facilitated when parents foster a close relationship with their children while at the same time setting limits and providing discipline (Holmbeck *et al.*, 1995).

The classic research on parenting by Baumrind (1978) identified three types of parental control (authoritative, authoritarian and permissive) that influence healthy adolescent development. Drawing on Baumrind (1978), Maccoby and Martin (1983) defined parenting along two distinct parenting dimensions: responsiveness and demandingness. Maccoby and Martin (1983) integrated responsiveness and demandingness into a typology of parenting style based on the child rearing dimensions of warmth (parental acceptance, nurturance, and involvement) and behavioral control (parental demandingness and responsiveness, monitoring and parenting that demands age appropriate behavior).

Researchers suggest that adolescents who feel an emotional bond with their family are at less risk of participating in problem behaviors, including early initiation of sexual intercourse, substance use and delinquency (Fletcher *et al.*, 2004; Resnick *et al.*, 1997). A close parent-adolescent relationship is important not only in lowering adolescent sexual behaviors but also serves as a necessary part of effective limit setting and communication (Jaccard *et al.*, 2000; Rodgers, 1999). Adolescents may consider parental wishes and concerns when they begin to make decisions about their sexual behavior as a result of a close parent-adolescent relationship. When parents do not have a close connection with their adolescents there is often an increase in peer influence on adolescent sexual activity (Metzler *et al.*, 1994). There is consistency across a review of studies that parent/child closeness is associated with reduced adolescent sexual risk

behavior, with teens remaining sexually abstinent, postponing intercourse, having fewer sexual partners, or using contraception consistently (Kotchick *et al.*, 2001; Miller *et al.*, 2001).

Behavioral control refers to the level of monitoring and limit setting used by parents (Gray and Steinberg, 1999). Specific aspects of behavioral control, consisting of parents' involvement in day-to-day decision making within their adolescent's life, has been associated with lower levels of problem behavior (Fletcher *et al.*, 2004; Steinberg, 1987). As a result of inadequate behavioral control, children do not learn to self-regulate and consequently tend to be impulsive, prone to risk taking, and susceptible to peer influence. Although the type of discipline exerted by parents over their children has been shown to directly shape their sexual activity, the findings from such studies have been inconsistent (Baldwin *et al.*, 1990; Jemmott and Jemmott, 1992; Lamborn *et al.*, 1996; Mason *et al.*, 1994, 1996). On the one hand, researchers have found that higher levels of restrictive parental control may be associated with better outcomes for African-American adolescents living in high-risk neighborhoods (Baldwin *et al.*, 1990; Lamborn *et al.*, 1996). For example, curfews may provide a specific strategy by which parents attempt to better supervise their adolescent's dating behavior because it may limit the opportunity that adolescents have for sexual activity. Studies have indicated that when parents, specifically African-Americans, define limits, supervise their adolescents' dating habits, and have open talks about sexual issues, their children are more likely to delay sexual onset, use condoms consistently, and have fewer sexual partners than peers (Jemmott and Jemmott, 1992).

On the other hand, studies have also found that restrictive control has been associated with increased externalizing behaviors in African American adolescents (Mason *et al.*, 1994). Moreover, studies have found a curvilinear trend whereby low levels and very high levels of behavioral control have been associated with adolescent antisocial problem behavior, especially in the presence of increased peer problem behavior (Mason *et al.*, 1996). Given the inconsistent findings, we conducted an exploratory analysis of the presence of a curvilinear relationship between parental behavioral control and sexual behavior in our sample. In such a relationship, an optimal level of behavior control, represented in the middle of a U-shaped function, would be related to less chance of sexual debut, whereas, extremes, too little or too much behavioral control, would increase the likelihood of sexual debut.

In the present study, it was hypothesized that higher levels of parental warmth would be associated with a delay in sexual behaviors among African-American adolescents regardless of gender. With respect to parental control, it was expected that gender would moderate the relationship between these parenting factors and adolescent sexual

**Table 1** Summary statistics for predictor variables at Time 1 (except as noted)

Variable	Boys ( <i>N</i> = 117)		Girls ( <i>N</i> = 157)	
	<i>M</i> (S.D.)	Range	<i>M</i> (S.D.)	Range
Statistical covariates				
Age at interview (Time 2)	13.22 (.786)	11.10–15.88	13.4 (.849)	11.31 to 16.14
HIV knowledge (Time 2)	.686 (.150)	.33–1.00	.723 (.158)	.33–1.00
Self report				
Parental warmth (Child)	2.39 (.319)	1.44–3.00	2.46 (.333)	1.56–3.00
Parental warmth (Parent)	2.63 (.262)	1.90–3.00	2.65 (.274)	1.90–3.00
Parental behavioral control (Child)	2.82 (.447)	1.73–3.88	2.78 (.409)	1.65–4.00
Parental behavioral control (Parent)	3.34 (.399)	2.13–4.00	3.28 (.427)	2.00–4.00
Observer report				
Parental warmth (Parent)	3.35 (.346)	2.40–4.15	3.35 (.378)	2.00–4.40
Parental behavioral control (Parent)	3.41 (.343)	2.50–4.13	3.35 (.347)	2.00–4.38

behavior. Specifically, it was expected that males who experience high levels of behavioral control would be less likely to demonstrate high-risk sexual behavior whereas females exposed to high levels of control would be more likely to demonstrate high-risk sexual behavior. Additionally, analyses explored whether there was a curvilinear relationship between behavioral control and sexual risk taking behaviors. In this study, it was also predicted that parental warmth and parental behavioral control would be associated with early sexual behaviors above and beyond HIV/AIDS knowledge.

## Method

### Sample

The CHAMP (Chicago HIV Prevention and Adolescent Mental Health Project) Family Study is a longitudinal project examining the role of family and mental health factors in HIV risk exposure during the transition to adolescence. Participants in the study were African-American preadolescents and their caregivers who were initially recruited during the 4th and 5th grades from elementary schools in urban, low-income neighborhoods (e.g., Paikoff *et al.*, 1997).

### Participant recruitment

These pre-adolescents were selected from Chicago public schools in neighborhoods with high concentrations of urban poverty and higher than average citywide rates of HIV infection. Children were recruited through their attendance at six public elementary schools in the target neighborhoods. Families of all fourth and fifth graders attending the schools were eligible for participation. Seven hundred forty flyers

providing information about the study were sent home to the parents of each fourth and fifth grader. Of those sent the flyer, 455 families (61%) returned the flyer expressing interest to participate, 72 families (10%) returned flyers expressing no interest in participating, and 213 families (29%) did not return the flyer. Attempts were made to reach all families who expressed an interest to participate. Interviewers contacted the families of each student whose mother indicated an interest in the study by phone or in person to set up interview appointments. The study was explained to each family and any questions were answered. A total of 309 African American children and families were seen initially, and 274 families (89%) from this group were seen at a second time point, approximately 2.5 years later.

### Demographics

The current data analyses included 274 children for whom data was completed at Time 1 and Time 2. The boys (*N* = 117) and girls (*N* = 157) were an average of 11.0 years of age (S.D. = 0.69, range 9.0–12.9) at the initial assessment point, and an average of 13.3 years (S.D. = 0.83, range 11.1–16.1) at the second assessment point. The length of time between assessments varied, with an average of 2.5 years. Children who had engaged in pre-adolescent sexual behaviors at Time 1 (*n* = 16) were excluded from various analyses to be able to predict onset of adolescent sexual behaviors at Time 2. All children in the sample were African American and the majority lived in single parent households, typically headed by a female caregiver (biological mother, grandmother, etc.). The majority of the sample was poor (65% had incomes less than \$10,000 per year). Regarding maternal education, 47% reported having a high school diploma or equivalent.

## Procedure

Four interviews were conducted at both waves, one with the primary caregiver, one with the child, a videotaped family interaction session with both caregiver and child, and a separate school-based interview with the child. All interviews were conducted in a university setting with the exception of the school-based interview. The order of questionnaires and family interaction tasks were randomized. Interviewers participated in at least 25 h of training and conducted the interviews during a 4 to 6 h time period in one session. Parents and children completed a set of questionnaires and 1 h of videotaped family interaction tasks.

## Questionnaire-based predictors

### *Parental warmth*

Parental warmth assesses the extent to which parents tend to be loving, responsive and involved. The maternal and adolescent report of parental warmth at Time 1 were obtained using questions adapted from the Pittsburgh Youth Study (Loeber *et al.*, 1987). For purposes of this study, parental warmth consisted of a subset of items drawn from the Positive Parenting measure (Gorman-Smith *et al.*, 1996) and additional items that reflected definitions of this construct. All 10 items in the scale at Time 1 were measured on a 3-point Likert scale ranging from either “hardly ever” to “often” or “almost never” to “almost always.” Both parent and adolescent were asked to indicate how often the parent did activities such as: (1) Saying something nice; praising or giving approval, and (2) Doing things together at home with child. Cronbach’s alphas for this scale were .75 for maternal report and .75 for adolescent report.

### *Parental behavioral control*

Parental control was conceptualized as the extent to which decisions regarding areas in adolescents lives were made by parents instead of by adolescent themselves. Adolescents and mothers completed an adaptation of the Decision-Making Questionnaire (Dornbusch *et al.*, 1985), a measure that assesses a respondent’s perception of who makes decisions in the family across 17 parenting issues at Time 1. For each issue, parents were asked whether they (a) leave it up to the child to decide (low control), (b) discuss the issue, but the child has the final say (responsive control), (c) discuss the issue, but the parent has the final say (firm control), or (d) tell their child exactly what to do (restrictive control). Analogous response options were administered to the adolescents. Questions were asked separately of both parent and adolescent across several issues (e.g., which friends to go out with; how late he or she can stay out). Scores can

range from 17 to 68, with higher scores indicating more restrictive control. Cronbach’s alpha for this scale was .77 for maternal report and .67 for adolescent report. In an urban sample of primarily African-American children, Holmbeck and O’Donnell (1991) reported an alpha coefficient of .83 for maternal report and .85 for child report suggesting adequate internal-consistency reliability for this ethnic group.

### *Adolescent AIDS knowledge*

This construct was assessed at Time 2 with a questionnaire adapted from the Youth AIDS Prevention Project (Levy *et al.*, 1993). Adolescents indicated the degree to which they understood how HIV is discovered, transmitted, and prevented. Eighteen items were scored on a scale assessing accuracy of their responses “true or false,” “safe or unsafe” or “not sure.” Examples of the true-false sample items are: (1) Only gay men and drug users get the AIDS virus; and (2) you can get AIDS by social (dry) kissing. The adolescents also responded to questions which asked whether the following activities were “safe or unsafe” or if they were “not sure” when it comes to getting infected with the AIDS virus (HIV): (1) Touching toilet seats, bathtubs, spoons, make-up, towels, cups, or other objects; (2) Reducing the number of sexual partners. Number of correct items were calculated and scores ranged from 0 to 18. Reliability was .68 for adolescent report.

## Observational predictors

### *Observational tasks*

For the family interaction tasks, families were presented with a warm-up task, which consisted of playing a card game. Following this, families completed several tasks. Family interaction tasks consisted of: (1) an unfamiliar board game requiring the family to make decisions regarding how to play a game on their own; (2) a conflict task requiring the family to discuss two issues about which they reported recent conflicts; and (3) a task that required the family to develop their own public service announcement (or “commercial”) on an issue of importance (e.g., drugs, HIV).

### *Macro-observational family interaction variables*

The Time 1 game and conflict tasks were coded using a global coding method developed by Holmbeck *et al.* (1996), adapting Smetana *et al.* (1991) system for use with inner city, single parent, African-American families. This system globally assesses five dimensions of parenting behaviors, child behavior, and parent-child relationships: (1) family interaction style, (2) conflict, (3) affect, (4) control, and (5) child-centered and collaborative problem-solving. Summary family measures are also included, which assessed



degree of overall family health and general family atmosphere (McBride *et al.*, 2003).

Several modifications of the coding system were made to ensure that the family processes were particularly applicable to African-American families (see McBride *et al.*, 2003). Parents from the same African-American community from which this sample was drawn provided suggestions regarding inclusion or exclusion of codes. In addition, a Ph.D. level sociologist, Robin Jarrett, Ph.D., who had considerable experience facilitating focus groups within the community was consulted. All raters who coded the videotapes were African-American individuals who had lived in the community or had worked extensively with community members and families. The rationale for using African-American coders was based on findings by Gonzales *et al.* (1996) that ratings of coders who were similar in ethnicity to the target population being studied demonstrated significantly higher validity than ratings of coders who differed in ethnicity from the families.

### *Observational scales*

The following scales were formed by selecting items from a list of codes that reflected the definitions of each construct as presented in past literature (items included within each scale are listed): (1) parental warmth (listens to others, involvement in task, warmth, supportiveness, humor and laughter), and (2) parental behavioral control (authoritarian, permissive (reverse-coded), overt power, structuring of task). Items were scored on a 5-point Likert Scale. All tasks were coded by two raters. Intraclass interrater reliability correlations for the two scales were .61 for behavioral control and .80 for parental warmth at Time 1. Cronbach's alphas for scale reliability were .72 and .82 for the two observational scales respectively.

### Outcome measures

#### *Interview on situations of sexual possibility*

At Time 1, a face to face interview was completed which assessed exposure to sexual possibility situations in pre-adolescence. Interviewers initially assessed participation in heterosocial behavior (e.g., running or chasing games, games where a boy-girl spent time apart from the group) and later clarified whether unsupervised heterosocial interactions had occurred in a private place in mixed sex groups (e.g., sexual possibility situations). Children who experienced sexual possibility situations were asked further questions regarding frequency of exposure, duration of exposure, and parents' or other adults' awareness of these situations. They were also asked about specific behaviors that occurred in sexual possibility situations, including playing hugging and kissing games, playing games where boy/girl

touched each other's bodies, and heterosexual intercourse. Interviewers were matched with adolescents by gender and ethnicity.

During Time 2, the interview was changed in various ways to maintain the need for privacy about heterosexual behavior at this age. Adolescents completed booklets by themselves and listened to the interview on tape with the aid of headphones and a portable cassette player if desired. Adolescents completed booklets which asked several questions regarding family relationships, peer influences, and adolescent sexual behaviors. They were provided with one of two versions of a second booklet based on whether or not the adolescent had reported experiencing intercourse in the first booklet. The two versions of this second booklet were distinctly different in that one asked more detailed questions about intercourse whereas the other did not. The outcome measures for this study at Time 2 consisted of the following: (1) Playing hugging and kissing games with a special friend; (2) Playing touching games with a special friend; and (3) Sexual intercourse.

## Results

### Descriptives

Boys (41.3%) were more likely than girls (19.0%) to play hugging and kissing games with a special friend at Time 2. Boys (27.4%) were also more likely to play touching games with a special friend than girls (11.5%). Similarly, boys (34.5%) were more likely to report engaging in sexual intercourse than girls (10.4%). Table 1 presents the means and standard deviations of each predictor variable, both self and observer reports at Time 1. Correlations between self-report and observational measures of warmth (child report and parent report) were significant however modest ( $r = 19$ ,  $p < .01$ ;  $r = .24$ ,  $p < .01$ ). The observational measures of parental warmth and parental control were also significantly correlated ( $r = .40$ ,  $p < .01$ ).

### Hierarchical logistic regression analyses

Logistic regression was the most appropriate analytic technique for examining associations between the predictors and the outcomes because the outcome variables for this study were dichotomous variables (yes-no). In logistic regression, one attempts to predict the log of the odds of an observation belonging to one outcome group or another. The odds ratio (computed by  $e$  raised to the power of beta) estimates the change in the odds of membership in the target group given a one-unit increment in the predictor variable. The relationship of the Time 1 predictor variables (e.g., child and parent report of parental warmth and behavioral control) to the

**Table 2** Questionnaire predictors of playing hugging or kissing games with a special friend at Time 2

Variable	Beta	Change in Chi-square	Exp (B)
<b>Step 1</b>			
Gender at T1	-1.093	12.367	.335***
HIV knowledge at T2	.514	.243	1.672
Age at T2	-.008	.002	.992
<b>Step 2</b>			
Parental warmth (Child at T1)	.940	3.646	2.56 <sup>+</sup>
Parental behavioral control (Child at T1)	-.306	.668	.736
Parental warmth (Parent at T1)	.449	.504	.638
Parental behavioral control (Parent at T1)	-.006	.000	1.006
<b>Step 3</b>			
Parental behavioral control (Child at T1) × gender	1.327	3.003	3.771 <sup>+</sup>
Parental warmth (Parent at T1) × gender	.738	.353	2.092
Parental warmth (Child at T1) × gender	-.589	.297	.555
Parental behavioral control (Parent at T1) × gender	-.037	.002	.964

Note. T1: Time 1.

T2: Time 2.

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

<sup>+</sup>*p* < .10.

outcome variables at Time 2 were examined. The total sample size for the current analyses included 274 children.

Hierarchical logistic regression analyses were conducted in several steps. The initial variable entry step included age (as assessed at Time 2) because the children varied in ages and because older children were probably more likely to have become sexually active. Gender and HIV knowledge at Time 2 were also entered in Step 1. Child and parent report of parental warmth and behavioral control were then entered as a set of predictors in Step 2. At Step 3, two-way interactions between the child and parent report of parental behaviors and gender were entered. The same procedure was used for the observational measures in separate logistic regression analyses.

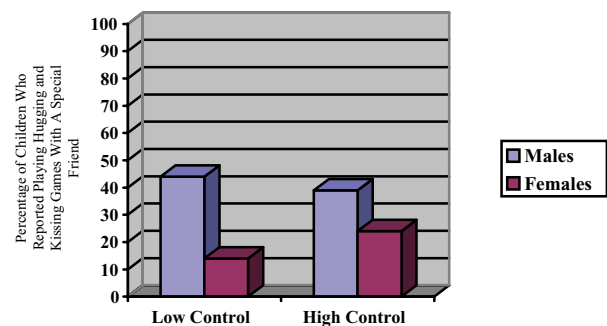
Questionnaire parenting variables at Time 1 as predictors of playing hugging and kissing games with a special friend at Time 2

As illustrated in Table 2, gender was a significant predictor of playing hugging or kissing games with a special friend at Time 2,  $\chi^2(1, N = 210) = 12.367, p < .001$ . Significantly more boys reported playing hugging and kissing games with a special friend at Time 2. There was a marginally significant main effect for the child report of parental warmth as a predictor of playing hugging or kissing games with a special friend at Time 2,  $\chi^2(1, N = 210) = 3.646, p < .10$ . Contrary to hypotheses, with greater levels of warmth, children were at increased risk of playing hugging or kissing games with a special friend. After controlling for age, gender, HIV knowledge and the relevant main effects, the interaction between the child’s report of parental behavioral control × gender at Time 1 was a marginally significant predictor of playing hugging or kissing games with a special friend at Time 2,  $\chi^2(1, N = 210) = 3.003, p < .10$ . To understand the interaction of parental behavioral control and gender,

two categories of parental behavioral control were created using a median split: (a) low control, and (b) high control. As illustrated in Fig. 1, under conditions of high parental control, boys were at increased risk for playing hugging or kissing games with a special friend than girls,  $\chi^2(1, N = 210) = 4.018, p < .05$ ; however, this gender differential risk was more significant under conditions of low parental control,  $\chi^2(1, N = 210) = 8.861, p < .01$ .

Questionnaire parenting variables at Time 1 as predictors of playing touching games with a special friend at Time 2

As illustrated in Table 3, gender was a significant predictor of playing touching games with a special friend at Time 2,  $\chi^2(1, N = 217) = 7.004, p < .01$ . Boys were more likely to play touching games with a special friend than girls at Time 2. After controlling for age, gender, HIV knowledge, and the relevant main effects, the interaction between the child report’s of behavioral control × gender at Time 1 was a significant predictor of playing touching games with a special friend at Time 2,  $\chi^2(1, N = 217) = 12.033, p < .001$ .



**Fig. 1** The relationship between level of parental behavioral control (Child Report) at Time 1 and playing hugging and kissing games with a special friend at Time 2

**Table 3** Questionnaire predictors of playing touching games with a special friend at Time 2

Variable	Beta	Change in Chi-square	Exp (B)
<b>Step 1</b>			
Gender at T1	-.972	7.004	.378**
HIV knowledge at T2	1.474	1.475	4.368
Age at T2	-.130	.289	.878
<b>Step 2</b>			
Parental warmth (Parent at T1)	-.825	1.402	.438
Parental behavioral control (Parent at T1)	.549	1.307	1.731
Parental warmth (Child at T1)	.418	.514	1.519
Parental behavioral control (Child at T1)	-.199	.201	.820
<b>Step 3</b>			
Parental behavioral control (Child at T1) × gender	3.329	12.033	27.911***
Parental behavioral control (Parent at T1) × gender	3.437	8.153	31.094**
Parental warmth (Child at T1) × gender	-1.206	.932	.300
Parental warmth (Parent at T1) × gender	-.777	.221	.460

Note. T1: Time 1.

T2: Time 2.

\*\**p* < .01.

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

As illustrated in Fig. 2, this finding suggests that under the condition of low parental control, boys were at significantly increased risk of playing touching games with a special friend at Time 2 than girls report,  $\chi^2(1, N = 217) = 13.355, p < .001$ . The significant gender difference was not found under the condition of high parental control.

The interaction between parent report of control × gender at Time 1 was also a significant predictor of playing touching games with a special friend at Time 2,  $\chi^2(1, N = 217) = 8.153, p < .01$  (see Table 3). The interaction effect was virtually identical to the effect for the child report of behavioral control.

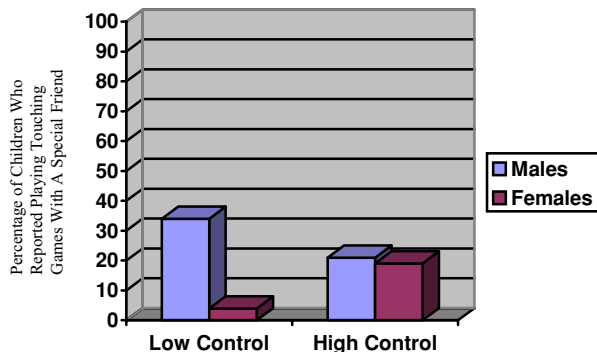
Questionnaire parenting variables at Time 1 as predictors of initiating sexual intercourse at Time 2

As illustrated in Table 4, gender was a significant predictor of initiating sexual intercourse at Time 2,  $\chi^2(1, N = 213) = 16.998, p < .001$ . Significantly more boys reported initiating sexual intercourse at Time 2. After con-

trolling for age, gender, HIV knowledge, and the relevant main effects, the interaction between the child’s report of warmth × gender at Time 1 was a marginally significant predictor of initiating sexual intercourse at Time 2,  $\chi^2(1, N = 213) = 3.337, p < .10$ . As illustrated in Fig. 3, boys were at increased risk for initiating sexual intercourse in conditions of low parental warmth,  $\chi^2(1, N = 213) = 3.997, p < .05$ ; however, this gender differential effect was more significant under conditions of high parental warmth,  $\chi^2(1, N = 213) = 17.559, p < .001$ .

Observational parenting variables at Time 1 as predictors of Time 2 sexual behavior outcome variables

The observational variables of family process were examined individually for their prediction of initiating intercourse. Age, gender, and HIV knowledge at Time 2 were entered in the first step to control for these effects. After controlling for age, gender and HIV knowledge and the relevant main effects, the interaction between parent’s observed behavioral control × gender at Time 1 was a marginally significant predictor of playing hugging and kissing games with a special friend at time 2,  $\chi^2(1, N = 212) = 2.843, p < .10$  (see Table 5). The interaction revealed that under the condition of high parental control, gender was a significant predictor of playing hugging and kissing games with a special friend at Time 2,  $\chi^2(1, N = 212) = 10.809, p < .01$ . As illustrated in Fig. 4, this finding suggests that under the condition of high parental control, boys were significantly at increased risk for playing hugging and kissing games with a special friend than girls,  $\chi^2(1, N = 212) = 10.809, p < .002$ ; however there was no gender differential risk under conditions of low parental control. There were no significant main effects and gender × parenting interaction for playing touching games with a special friend or initiating intercourse.



**Fig. 2** The relationship between level of parental behavioral control (Child Report) at Time 1 and playing touching games with a special friend at Time 2



**Table 4** Questionnaire predictors of initiating sexual intercourse at Time 2

Variable	Beta	Change in Chi-square	Exp (B)
<b>Step 1</b>			
Gender at T1	-1.437	16.998	.238***
HIV knowledge at T2	1.645	1.994	5.183
Age at Time 2	.149	.428	1.161
<b>Step 2</b>			
Parental warmth (Parent at T1)	-.824	1.534	.439
Parental warmth (Child at T1)	.411	.537	1.508
Parental behavioral control (Child at T1)	-.271	.427	.763
Parental behavioral control (Parent at T1)	.089	.038	1.093
<b>Step 3</b>			
Parental warmth (Child at T1) × gender	-2.048	3.337	.129 <sup>+</sup>
Parental behavioral control (Child at T1) × gender	.697	.560	2.007
Parental behavioral control (Parent at T1) × gender	.502	.277	1.652
Parental warmth (Parent at T1) × gender	-.128	.008	.880

Note. T1: Time 1.

T2: Time 2.

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

<sup>+</sup>*p* < .10.

**Curvilinear relationship between behavioral control and sexual behavior**

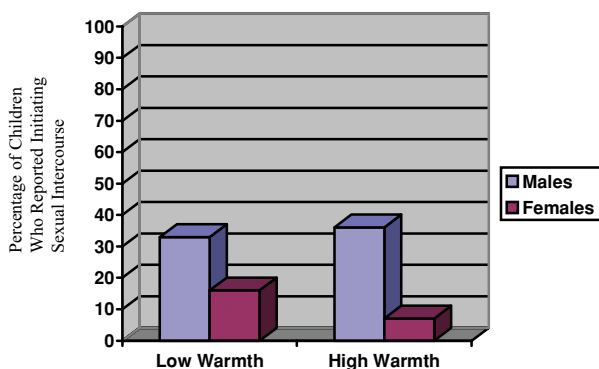
Hierarchical logistic regression analyses were used to examine whether there was a curvilinear relationship between self-report and observational measures of behavioral control and the dichotomous outcome variables (playing hugging and kissing games with a special friend, playing touching games with a special friend, initiating sexual intercourse) at Time 2. To test whether there was a curvilinear relationship, the quadratic term of the child’s report or parent’s report of behavioral control variable was entered into a logistic regression after controlling for the linear term. Analyses indicated that there was not a curvilinear relationship between any measures of behavioral control and the sexual outcome variables.

**Discussion**

The purpose of this study was to examine parental warmth and parental behavioral control as predictors of the onset

of sexual behaviors among urban African American youth. Findings suggest that parental behavioral control, as reported both by the child and parent, is an important predictor of early adolescent sexual behaviors, although such effects were moderated by gender. Boys were more likely than girls to exhibit an early onset of pre-sexual risk behavior, but they were particularly at risk in *low* parental control environments (a finding that was consistent with hypotheses). Contrary to these findings, girls were more likely to exhibit *high* risk pre-sexual behaviors in *high* control environments. In other words, higher levels of parental behavioral control served as a risk factor for girls while being a protective factor for boys. Moreover, with respect to sexual intercourse, boys were more at risk than girls, but especially when reared in high warmth environments.

Combining across findings for behavioral control and warmth, the findings in this study suggest that boys reared in low control/high warmth (i.e., permissive) homes and girls reared in high control/low warmth (i.e., authoritarian) homes were most at risk. With respect to girls, why are increased levels of control associated with an increased risk for adolescent sexual behaviors? Cauce *et al.* (1996) found that conflicts between African American mothers and their daughters often escalated because daughters felt that their mother’s controlling behaviors interfered with their own autonomy but mother’s viewed their behaviors as an attempt to facilitate more autonomy in their daughters by prompting their daughters to take on more adult responsibilities. There may be more disagreements in families where girls perceive their parents as over-controlling and such girls may feel more rebellious and more likely to engage in sexual behavior. For African American girls, early pubertal maturation may also be accompanied by increased parental restrictiveness and greater conflict between parents and adolescents due to fears of early sexual debut (Hill *et al.*, 1985). Research has found that African American adolescents who were more



**Fig. 3** The relationship between level of parental warmth (Child Report) at Time 1 and initiating sexual intercourse at Time 2

**Table 5** Observational variables as predictors of playing hugging or kissing games with a special friend at Time 2

Variable	Beta	Change in Chi-square	Exp (B)
Step 1			
Gender at T1	-1.114	12.88	.328***
HIV knowledge at T2	.477	.209	1.611
Age at T2	-.010	.002	.990
Step 2			
Parental warmth (Parent at T1)	.650	2.062	1.916
Parental behavioral control (Parent at T1)	.054	.010	1.055
Step 3			
Parental behavioral control (Child at T1) × gender	-1.722	2.843	.179 <sup>+</sup>
Parental warmth (Parent at T1) × gender	-.126	.017	.881

Note. T1: Time 1.

T2: Time 2.

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

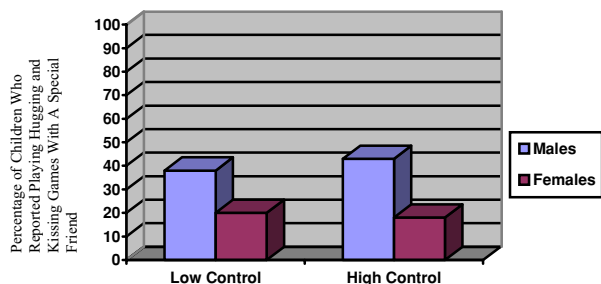
<sup>+</sup>*p* < .10.

developed in comparison to their peers and who reported conflict with their parents were significantly more likely to initiate intercourse over time (McBride *et al.*, 2003). For boys, living in urban high-risk neighborhoods may expose boys to greater dangers than girls through their involvement in gangs. Therefore, increased levels of control at younger ages for boys (i.e., in 10 and 11 year olds) may be more appropriate.

Most of the significant findings in this study were for the child-report of parenting measures as predictors of the child-reported sexual behaviors. Although a portion of these effects may be due to common method variance, the significant finding for *parent-reported* control as a predictor of touching supports the overall conclusions of this study. With respect to the observational measures, boys were significantly more at risk for playing hugging and kissing games with a special friend under conditions of high parental behavioral control. These findings were not consistent with the results found using the questionnaire measures. Moreover, the observational measure for parental warmth at Time 1 did not predict sexual behaviors at Time 2. It is possible that both the observational measures and questionnaire measures of parental warmth may be less directly linked to the experiences of single parent, female headed, urban African American families. Constructs such as parental “connectedness” and “family cohesion” may be more salient constructs for African American single par-

ent families. For example, Smetana *et al.* (2000) adapted their previously developed global coding system to permit assessment of parent-adolescent interactions in middle class African American families. Coding variables such as family harmony, interconnectedness, and genuineness were added to the original coding scheme because they were found to be salient dimensions in African American family interactions. The results of their study indicated that middle class African American family interactions generally were warm, positive, and cohesive.

It is important to note some limitations of the present study that need to be considered. One issue relates to the reliability of adolescent reports of sexual behaviors. First, adolescents may be susceptible to either under- or overreport sexual behavior. However, several steps were taken to ensure the privacy and confidentiality of all private information in this study. Adolescents were interviewed separately from their parents in order to reduce concern about disclosure of adolescent’s sexual activity to the parent. Second, most of the findings in this study emerged for the child report of parenting and not parent report or observational measures, thus making it difficult to completely rule out common method variance interpretations for the study. Third, the assessment of sexual possibility situations was restricted to heterosexual situations. Fourth, given the focus on single parent African American families, another limitation of this study is that these findings may not be generalizable to other populations living in other communities. Furthermore, these results may not generalize to African Americans in non-urban and/or higher income settings. Indeed, research examining family interaction patterns in African American families has emphasized the need to compare family interactions between middle class African American families and lower socioeconomic status families (Smetana *et al.*, 2000). Finally, we chose to interpret marginally significant effects because of the difficulty in detecting statistically significant interactions in studies with low to moderate sample sizes (Aiken and West, 1991). Although this practice may have produced Type I errors, the consistency of findings across the significant and



**Fig. 4** The relationship between level of parental behavioral control (observational measure) at Time 1 and playing hugging and kissing games with a special friend at Time

marginally significant effects make this possibility less likely (McClelland and Judd, 1993).

Despite these limitations, the findings of this study have several clinical implications. Since parents are the major socializing agents for children, it is important that interventions help African American parents promote and maintain health-promoting behaviors among youths. Programs must be sensitive to the issues and needs of ethnic minority adolescents given the density of risks that they face within their daily experience. Parental behavioral control is an important area of investigation given the potential influence of control on frequency of sexual risk behaviors among adolescents. Determining factors that influence this process is essential to understanding how parental control impacts on boys and girls differently. Few studies have focused on differences in risk factors between boys and girls, although there appear to be differences in the determinants and patterns of sexual activity by gender. A difference in the patterns of significant predictors by gender indicates that programs may need to target particular issues relevant to boys and girls. Intervention efforts targeting early adolescents should also include discussions of non-intercourse behaviors such as foreplay and non-penetrative sex as a means of delaying coitus, given that adolescents typically engage in a series of sexual behaviors with partners of the opposite sex prior to sexual intercourse.

The present study offers a significant contribution to the existing literature by identifying parenting factors that may contribute to adolescent sexual behaviors among African American families. Although past research has investigated relations between parenting and adolescents' sexual behavior, few studies have examined familial factors that influence sexual risk taking behavior in low-income African-American families. Moreover, most studies have not included observational measures of parenting practices among African-Americans. The current study examines observed *and* perceived parenting behaviors in relation to adolescent sexual behavior using a longitudinal design. We also examined the moderating influence of gender on parenting practices and adolescent sexual behavior. The findings of the present study suggest that inconsistent findings in past work regarding the relationship between parental behavioral control and adolescent sexual behaviors may be due to a failure to consider gender as a potential moderating factor. Given the lack of findings for warmth, measures that tap constructs such as parental connectedness and family cohesion may have more relevance to African American families and should be examined in future work.

## References

- Aiken LS, West SG (1991) Multiple regression: Testing and interpreting interactions. Sage, Thousand Oaks
- Baldwin C, Baldwin A, Cole R (1990) Stress-resistant families and stress-resistant children. In: Rolf J, Masten A, Cicchetti D, Neuchterlin K, Weintraub S (eds) Risk and protective factors in the development of psychopathology. Cambridge University Press, New York, pp 257–280
- Baumrind D (1972) An exploratory study of socialization effects on Black children: some Black-White comparisons. *Child Dev* 43:261–267
- Baumrind D (1978) Parental disciplinary practices and social competence in children. *Youth Soc* 9:239–276
- Brooks-Gunn J, Paikoff RL (1993) Sex is a gamble, kissing is a game: adolescent sexuality and health. In: Millstein S, Peterson AC, Nightingale AE (eds) Promoting healthy behavior during adolescence. Oxford University Press, New York, pp 180–208
- Cauce AM, Hiraga Y, Graves D, Gonzales H, Ryan-Finn K, Grove K (1996) African-American mothers and their adolescent daughters: Closeness, conflict & control. In: Leadbeater B, Way N (eds) *In Urban girls: Resisting stereotypes, creating identities*. New York University Press, New York, pp 100–116
- Centers for Disease Control and Prevention (2000) Cumulative AIDS Cases; Exposure Categories; Ten States/Territories and Cities Reporting the Highest Number of AIDS Cases; International Statistics (retrieved June 7, 2002, from <http://www.cdc.gov/hiv/stats/trends98.pdf>)
- Centers for Disease Control and Prevention (2005) HIV/AIDS among youth. HIV/AIDS Surveillance Report. US Department of Health and Human Services, Atlanta
- Cross SE, Madson L. (1997) Models of the self: self constructs and gender. *Psychol Bull* 122(1):5–37
- Dornbusch SM, Carlsmith JM, Buschwall SJ, Ritter PL, Leiderman H, Hastorf AH, Gross RT (1985) Single parents, extended households, and the control of adolescents. *Child Dev* 56:326–341
- Fisher JD, Fisher WA (1992) Changing AIDS risk behavior. *Psychol Bull* 11:455–474
- Fletcher AC, Steinberg L, Williams-Wheeler M (2004) Parental influences on adolescent problem behavior: revisiting Stattin & Kerr. *Child Dev* 75(3):781–796
- Gonzales NA, Cauce AM, Mason CA (1996) Interobserver agreement in the assessment of parental behavior and parent-adolescent conflict: african American mothers, daughters, and independent observers. *Child Dev* 67:1483–1498
- Gorman-Smith D, Tolan PH, Zelli A, Huesman LR (1996) The relation of family functioning to violence among inner-city minority youth. *J Fam Psychol* 10:115–129
- Gray MR, Steinberg L (1999) Unpacking authoritative parenting: reassessing a multidimensional construct. *J Marriage Fam* 61(3):574–587
- Hatchett SJ, Jackson JS (1993) African American extended kin systems. In: McAdoo, HP (ed) *Family ethnicity: Strength in diversity*. Sage, Newbury, Park, CA, pp 90–108
- Hill JP, Holmbeck GN (1986) Attachment and autonomy during adolescence. *Ann Child Dev* 3:145–189
- Hill JP, Holmbeck GN, Marlow L, Green T, Lynch M (1985) Menarcheal status and parent-child relations in families of seventh grade girls. *J Youth Adolesc* 14:301–316
- Holmbeck GN, O'Donnell K (1991) Discrepancies between perceptions of decision-making and behavioral autonomy. In: Paikoff RL (ed) *Shared views in the family during adolescence: New directions for child development*. Jossey-Bass, San Francisco, pp 51–70
- Holmbeck GN, Paikoff RL, Brooks-Gunn J (1995). Parenting adolescents. In: Bornstein MH (ed) *Handbook of parenting, Vol. 1: Children and parenting*. Lawrence Erlbaum, New Jersey
- Holmbeck GN, Paikoff RL, Jarrett RL, Belvedere M, Gorey-Ferguson L, Schneider J, Williams S (1996) *Family Macro-Coding Manual*:

- NIMH Dyadic Version. Unpublished coding manual. Loyola University of Chicago
- Jaccard J, Dittus PJ, Gordon VV (1996) Maternal correlates of adolescent sexual and contraceptive behavior. *Fam Plann Perspect* 28:159–165
- Jaccard J, Dittus PJ, Gordon VV (2000) Parent-teen communication about premarital sex: factors associated with the extent of communication. *J Adolesc Res* 15(2):187–208
- Jemmott JB, Jemmott LS (1992) Increasing condom use intentions among sexually active Black adolescent women. *Nurs Res* 41:273–279
- Kelley ML, Power TG, Wimbush DD (1992) Determinants of disciplinary practices in low-income Black mothers. *Child Dev* 63:573–582
- Kotchick BA, Dorsey S, Miller KS, Forehand R (1999) Adolescent sexual risk-taking behavior in single parent ethnic minority families. *J Fam Psychol* 13:93–102
- Kotchick BA, Shaffer A, Miller KS, Forehand R (2001) Adolescent sexual risk behavior: a multi-system perspective. *Clinical Psychology Review* 21(4): 493–519
- Lamborn SD, Dornbusch SM, Steinberg L (1996) Ethnicity and community context as moderators of the relations between family decision making and adolescent adjustment. *Child Dev* 67:283–301
- Levy SR, Lampman C, Handler A, Flay BR (1993) Young adolescent attitudes toward sex and substance use: implications for AIDS prevention. *AIDS Educ Prev* 5:340–351
- Loeber R, Stouthamer-Loeber M, Farrington D, Van Kammen W (1987) Measurement instruments and constructs. In: antisocial behavior and mental health problems: Explanatory factors in childhood and adolescence. Mahwah, Erlbaum, NJ
- Lynch DA, Krantz S, Russell JM, Hornberger LL, Van Ness CJ (2000) HIV infection: a retrospective analysis of adolescent high-risk behaviors. *J Pediatr Health Care* 14:20–25
- Maccoby EE, Martin J (1983) Socialization in the context of the family. In: Hetherington EM (ed) *Handbook of child psychology: Vol. 4. Socialization, personality, and social development*. Wiley, New York, pp 1–102
- Mason CA, Cauce AM, Gonzales NA, Hiraga Y (1996) Neither too sweet nor too sour: problem peers, maternal control, and problem behaviors in African-American Adolescents. *Child Dev* 67:2115–2130
- Mason CA, Cauce AM, Gonzales N, Hiraga Y, Grove K (1994) An ecological model of externalizing behaviors in African-American adolescents: no family is an island. *J Res Adolesc* 4:639–655
- McBride CM, Paikoff RL, Holmbeck GN (2003) Individual and familial influences on the onset of sexual intercourse among urban African American adolescents. *J Consult Clin Psychol* 71(1): 159–167
- McClelland G, Judd CM (1993) Statistical difficulties of detecting interactions and moderator effects. *Psychol Bull* 114(2):376–390
- Meschke LL, Bartholomae S, Zentall SR (2000) Adolescent sexuality and parent adolescent processes: Promoting healthy teen choices. *Child Dev* 49:143–154
- Metzler CW, Noell J, Biglan A, Ary D, Smolkowski K (1994) The social context for risky sexual behavior among adolescents. *J Behav Med* 17(4):419–438
- Miller BC, Benson B, Galbraith K (2001) Family relationships and adolescent pregnancy risk: a research synthesis. *Dev Rev* 21:1–38
- Miller K, Forehand R, Kotchick B (2000) Adolescent sexual behavior in two ethnic minority groups: a multisystemic perspective. *Adolescence* 35:313–333
- Paikoff RL, Parfenoff SH, Williams SA, McCormick A, Greenwood G, Holmbeck G (1997) Parenting, parent-child relationships, and sexual possibility situations among urban African American preadolescents: Preliminary findings and implications for HIV prevention. *J Fam Psychol* 11(1):11–12
- Resnick M, Bearman P, Blum R, Bauman KE, Harris KM, Jones J, Tabor J, Beuhring R, Sieving RE, Shew M, Ireland M, Bearinger L, Udry R (1997) Protecting adolescents from harm: findings from the national longitudinal study on adolescent health. *JAMA* 278:823–832
- Rodgers KB (1999) Parenting processes related to sexual risk-taking behaviors of adolescent males and females. *J Marriage Fam* 61:99–109
- Rothbaum F, Weisz JR (1994) Parental caregiving and child externalizing behaviors in nonclinical samples: a meta-analysis. *Psychol Bull* 116:55–74
- Scaramella LV, Conger RD, Simmons RL (1999) Parental protective influences and gender-specific increases in externalizing and externalizing behaviors. *J Res Adolesc* 9:111–141
- Smetana JG, Abernathy A, Harris A (2000) Adolescent-parent interactions in middle-class African American families: longitudinal change and contextual variables. *J Fam Psychol* 14(3):458–474
- Smetana JG, Campione-Barr N, Daddis C (2004) Longitudinal development of family decision making: Defining healthy behavioral autonomy for middle-class African American adolescents. *Child Dev* 75(5):1418–1434
- Smetana JG, Yau Restrepo, Braeges J (1991) Adolescent-parent conflict in married and divorced families. *Dev Psychol* 27(6):1000–1010
- Steinberg L (1987) Familial factors in delinquency: A developmental perspective. *J Adolesc Res* 2:255–268
- Steinberg L (1990) Interdependency in the family: Autonomy, conflict, and harmony in the parent-adolescent relationship. In: Feldman SS, Elliott GR (eds) *At the threshold: the developing adolescent*. Harvard University Press, Cambridge, MA, pp 255–276
- Steinberg L, Mounts N, Lamborn S, Dornbusch S (1991) Authoritative parenting and adolescent adjustment across varied ecological niches. *J Res Adolesc* 1:19–36
- Taylor-Seehafer M, Rew L (2000) Risky sexual behavior among adolescent women. *J Soc Pediatr Nurses* 5:15–25
- Werner NE, Silbereisen RK (2003) Family relationship quality and contact with deviant peers as predictors of adolescent problem behaviors: The moderating role of gender. *J Adolesc Res* 18(5):454–480
- Zimmer-Gembeck MJ, Collins WA (2003) Autonomy development during adolescence. In: Adams GR, Berzonsky M (eds) *Blackwell handbook of adolescence*. England:Blackwell, Oxford, pp 175–204