

ASSOCIATION BETWEEN PARENTAL BEHAVIOR
CONTROL AND YOUTH ANTISOCIAL BEHAVIOR:
AN EXAMINATION OF AGE DIFFERENCES

By

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2008

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
July, 2011

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TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	2
II. REVIEW OF LITERATURE.....	3
Brief Overview of Developmental Changes during Adolescence	3
Parental Behavior Control.....	4
Age Differences in Parental Behavior Control	6
Link between Behavior Control and Youth Antisocial Behavior	8
Age Differences in Link between Behavior Control and Antisocial Behavior	9
Influence of Youth Sex, Ethnicity, and Family Income	10
Summary Research Goals, and Hypothesis	10
III. METHODS	12
Participants and Procedure.....	12
Measures: Overview	13
Measures: Youth Age	13
Measures: Behavior Control	14
Measures: Youth Antisocial Behavior	15
Analysis Overview	16
IV. RESULTS	17
Descriptive Statistics.....	17
Research Question # 1	17
Research Question # 2	18
Research Question # 3	19

Chapter	Page
V. DISCUSSION	20
Conclusions, Limitations and Future Directions	24
REFERENCES	25
APPENDICES	33

LIST OF TABLES

Table	Page
Table 1	34
Table 2	35
Table 3	37
Table 4	38
Table 5	39
Table 6	40
Table 7	41
Table 8	42
Table 9	43
Table 10	44
Table 11	45
Table 12	46
Table 13	47
Table 14	48
APPENDIX A.....	49

CHAPTER I

INTRODUCTION

A number of studies have found that parental behavior control is a determinant of child behavior (e.g., Barber, Olsen, & Shagle, 1994; Huth-Bocks & Hughes, 2008; Laird, Criss, Pettit, Bates, & Dodge, 2009; Soenens, Vansteenkiste, Luyckx, & Goossens, 2006). Specifically, high levels of parental behavior control (e.g., parental monitoring, family rules) have been linked to low levels of antisocial behavior, aggression, and deviancy, especially during adolescence. In addition, there is evidence that the level of behavior control significantly changes during adolescence, perhaps in response to developmental changes within the youth (Paikoff, & Brooks-Gun, 1991; Parke, 2004). Finally, there have been studies which have shown that the influence of behavior control on youth behavior may change with age (e.g., Bongers, Koot, Ende, & Verhulst, 2004; Frick, Christian, & Wootton, 1999). That is, there is evidence that this link is stronger for younger adolescents compared to older youth.

While the importance of parental behavior control has been established, there are some limitations of this literature. First, most studies in this area has focused on a single dimension of behavior control (e.g., parental knowledge; Barber et al., 1994) with few investigators assessing multiple types of control. A second limitation in the literature is that few studies have controlled for key demographic variables in the analyses, such as child ethnicity, child sex, and family income which have been linked to both parenting and antisocial behavior (Kim, Capaldi, & Stoolmiller, 2003; Laird, Pettit, Dodge, & Bates, 2003; Shakib et al., 2003).

There were three goals of the current investigation. First, I examined whether there were age differences in the level of parental behavior control. The second goal was to examine the

association between behavior control and youth antisocial behavior. Finally, I investigated if there were age differences in the link between behavior control and child antisocial behavior. In all of the analyses, youth sex, youth ethnicity, and family income were entered as covariates.

CHAPTER II

LITERATURE REVIEW

There will be four sections in the literature review. First, a brief summary of the developmental changes (i.e., physical, cognitive, and social) that occur during adolescence will be discussed. Second, I will provide an overview of the parental behavior control literature regarding how the construct has been defined and assessed during the past two decades. Third, I will discuss the studies examining developmental change or age differences in the level of parental behavior control. Research examining links between behavior control and adolescent antisocial behavior next will be reviewed. In the fifth section, I will explore the possibility that the link between parental behavior control and antisocial behavior is stronger among younger adolescents compared to older youth. Finally, I will state the research questions and hypotheses of this study.

Brief Overview of Developmental Changes during Adolescence

Adolescence is a developmental period involving very radical developmental changes within the adolescent (Paikoff & Brooks-Gunn, 1991; Steinberg, 1990; Steinberg & Morris, 2001). For example, physical changes associated with puberty lead to a tremendous growth spurt and other physical transformations (e.g., facial hair) which lead many youth to look more like adults than before (Paikoff & Brooks-Gunn, 1991). There also are advances in adolescents' cognitive and social cognitive skills as youth display more advanced abstract thinking and perspective taking (Steinberg, 1990). Moreover, adolescence is a period of transformations in emotion regulation (Morris et al., 2007). Specifically, perhaps due to further developments of the

brain, youth are better at regulating their negative emotions. In addition to emotion regulation, adolescence is characterized by increases in behavior regulation (Steinberg, 1990). That is, adolescents are better able to control and modulate their behavior compared to younger children. For instance, there is evidence that the frequency of aggressive behavior (especially overt antisocial behavior like physical aggression) tends to decrease during adolescence (Bongers et al., 2004; Martino, Ellickson, Klein, McCaffrey, & Edelen, 2008). In summary, adolescence is characterized by a number of important developmental changes.

Parental Behavior Control

Given that behavior regulation is a critical issue during adolescence, how parents regulate or manage their children's behavior has been the focus of an extensive research (e.g., Barber et al., 1994; Stattin & Kerr, 2000; Steinberg & Morris, 2001). Much of this literature is based on the assumption that parents play an important role in socialization process by teaching their children the rules and regulations necessary to become competent individuals who are compliant with social norms (Barber et al., 1994; Steinberg, 1990). One way that parents facilitate the socialization process is through a factor that has been referred to as *behavioral control* (Barber et al., 1994) which refers to parental efforts to control, regulate, or manage their children's behavior. Researchers investigating this construct have focused on a variety of different behaviors. For instance, some researchers have assessed *family rules* (Laird et al., 2009; Patterson, Reid, & Dishion, 1992) which essentially reflect a system of verbal or written instructions for appropriate behavior inside and outside of the home. Rules are important because they provide guidance for how to behave when parents are not around (Laird et al., 2009). Another key component is *parental monitoring or supervision* (Barber et al., 1994; Dishion & McMahon, 1998; Stattin & Kerr, 2000). Before the year 2000, the assessment and definition of parental monitoring varied greatly. Some researchers, such as Barber (Barber et al., 1994), used measures assessing parental knowledge (i.e., the extent to which the parent is aware of the child's behavior). Other social scientists have assessed what could be construed as a lack of parental involvement (i.e., parents

spending little or no time with their children on a daily basis). For instance, Stoolmiller (1994) used a variable called unsupervised wandering which reflected the amount of time that the youth is outside the home by themselves without an adult around. Patterson and Stouthamer-Loeber (1984), in one of the earliest studies on parental monitoring, used a similar measure. Other researchers in the past have used items assessing multiple dimensions of behavior control (e.g., parental knowledge, parental tracking, parental involvement; e.g., Criss, Shaw, & Ingoldsby, 2003; Pettit, Laird, Dodge, Bates, & Criss, 2001).

In 2000, Stattin and Kerr published two papers (Kerr & Stattin, 2000; Stattin & Kerr, 2000) where they reconceptualized the monitoring construct and broke it down into its separate components. They called one factor *parental solicitation*, which refers to when parents ask their children questions about their daily activities. *Child disclosure* is when children start conversations with their parents about their daily behavior. They also examined *parental knowledge* which, as mentioned earlier, reflects the extent to which parents are aware of their children's activities. Kerr and Stattin also assessed what they called "parental control" which is similar to the family rules variable (e.g., "Must you have your parents' permission before you go out during the weeknights?"). Since 2000, most investigations that have examined parental monitoring have assessed these different components (e.g., Soenens, Vansteenkiste, Luyckx, & Goossens, 2006). In sum, researchers studying behavioral control have assessed it in a number of ways: family rules, parental involvement (or lack of), and monitoring (i.e., parental solicitation, child disclosure, parental knowledge). This indicates that parents may use a number of different approaches when controlling or regulating their children's behavior. This also suggests that aspects of behavior control may be more dyadic (rather than just parent behavior) given adolescents' increased involvement in the behavior regulation process (Maccoby, 1992; Steinberg, 1990).

It should be noted that efforts to control and regulate children's behavior are also key aspects of Baumrind's parenting styles (Baumrind, 1991; Baumrind, in preparation). Specifically,

authoritative and authoritarian parenting styles are both characterized by high levels of parental demandingness (i.e., having expectations regarding child behavior), and thus each uses a form of behavior control, though the method of behavior control differs. According to Baumrind, authoritative parents use confrontive (goal-directed) behavior control by providing guidance and limits with frequent discussions with the child regarding family rules. On the other hand, authoritarian parents are more likely to use coercive (or manipulative) behavior control by imposing strict, inflexible rules and by not involving children in the process. In other words, parents using both parenting styles are likely to use certain forms of behavior control, since they both emphasize high levels of demandingness in the home. However, the manner in which parental behavior regulation is enforced and the role of children in this process is likely to differ.

Other researchers in the field have argued that another way parents can control or regulate their children's behavior is by having a positive and supportive relationship with them. For instance, Hirschi's (1969) Social Control Theory argues that children's natural tendency to deviancy can be weakened through bonds to conventional society, including a positive bond or relationship with their parents. Moreover, Hirschi argued that children are more open to parental socialization efforts when they have a positive bond with their parents. Kochanska (1997) also argued that parental socialization efforts are more effective when parents have positive and mutually responsive relationships with their children, though she never argued that children have a natural tendency towards deviancy and her research focuses on early to middle childhood. In sum, another way parents can regulate or control their children is having relationships with them characterized by high levels of openness and warmth and low levels of conflict and coercion (Hirschi, 1969; Kochanska, 1997; Maccoby, 1992).

Age Differences in Parental Behavior Control

Both theoretical and empirical evidence suggest that the level of behavior control tends to vary during adolescence and that this variation is shaped by the biological, psychological, and social transformations discussed earlier. Specifically, boys and girls experience major hormonal

changes during adolescence which lead to mood swings and physical changes such as an increase in height and muscles both of which lead to changes in how adolescents perceive themselves and how others view them (Paikoff & Brooks-Gunn, 1991; Steinberg, 2001). Adolescence is also characterized by an increased involvement with peers which also could shape what goes on in the family (Laird, et al., 2003). These factors and transformations may be possible reasons for changes in behavior control during adolescence. For example, Keijsers, Frijns, Branje, and Meeus (2009) reported significant decreases in child disclosure and parental solicitation from ages 13-16 years old using a Dutch sample. Also, Laird et al. (2009) reported that parental knowledge and family rules both significantly decreased from 12-16 years. These findings are consistent with Frick et al. (1999) who reported significantly lower levels of parental involvement and supervision in older adolescents compared to younger youth. Overall, the evidence suggests that behavior control tends to be lower in older adolescents compared to younger youth.

Changes within the adolescent are also linked to changes in parent-child relationship quality, which, as mentioned earlier, is another means of regulating or controlling child behavior (Hirschi, 1969; Kochanska, 1997; Maccoby, 1992). Regarding the pattern of change in relationship quality, the literature seems to suggest two possibilities. On one hand, because parents and adolescents spend increasingly less time together as the child ages (Montemayor, 1983; Stoolmiller, 1994), there may be significantly *lower* levels of both openness/warmth and conflict/coercion in older youth compared to younger adolescents. On the other hand, given that the parent-child relationship is said to be transformed during adolescences changing from parent-dictated (or vertical) to more peer-like (or horizontal) relations (Steinberg, 1990; Steinberg & Morris, 2001), it is possible that parents and youth may have *higher* levels of openness and warmth during late adolescence compared to early adolescence. The empirical evidence in the literature seems to provide evidence for both perspectives. For example, Laursen, Coy, & Collins (1998) conducted a longitudinal study on adolescents and reported significant changes in parent-child conflict during adolescence. Results indicated increased level of conflict and warmth with

age. In contrast, Denissen, van Aken, and Dubas (2009) studied 287 two-parent Dutch families with 11-16 years old adolescents and found that parent-child warmth and openness increased with child's age.

Link between Behavior Control and Youth Antisocial Behavior

In addition to there being developmental/age changes in behavior control during adolescence, this construct has been linked to adolescent antisocial behavior in the literature. There are a number of possible reasons for this link. For example, parental monitoring, one type of behavior control, is said to serve as feedback component in the socialization process allowing parents to determine whether their previous instructions were successful (Crouter, Helms-Erikson, Updegraff, McHale, 1999; Dishion & McMahon, 1998). In addition to parental monitoring, family rules also are critical in that they serve as guidance for adolescents regarding appropriate and inappropriate behavior inside and outside of the home (Laird et al., 2009; Patterson et al., 1992). Moreover, having a positive and open parent-adolescent relationship is important because it influences the development of positive and prosocial social cognition, like social information processing (Crick & Dodge, 1994) and internal working models (Laible, Carlo, & Raffaelli, 2000), both of which can shape adolescent behavior. Moreover, as mentioned earlier, having an open and mutually responsive relationship also would increase the chances that the youth would be open to the parent's socialization efforts (Hirschi, 1969; Kochanska, 1997; Maccoby, 1992). Consistent with these theoretical perspectives, Herrenkohl, Hill, Haskins, Chung, and Nagin (2006) found family management practices (e.g., family rules) were inversely associated with adolescent violent behavior at age 18. Using a sample of 122 families with 10-year-old sons, Criss et al. (2003) reported that high levels of parental monitoring and parent-child openness and low levels of parent-child conflict were related to low levels of antisocial behavior at age 10. Vieno, Nation, Pastore, and Santinello (2009) studied 840 Italian children in early adolescence (ages 11 to 15 years) and concluded that maternal-child closeness was negatively associated to adolescent antisocial behavior. Laird et al. (2009) conducted a longitudinal study

involving 404 families with 10-16 year old adolescents and reported that both parental knowledge and family rules were significantly and inversely related to adolescent delinquent behavior. In summary, there is significant evidence from research that demonstrates a negative relation between behavior control and adolescent antisocial behavior.

Age Differences in Link between Behavior Control and Antisocial Behavior

While research has demonstrated significant and inverse relations between parental behavior control and youth antisocial behavior, there is some evidence that there may be age differences regarding these links. Specifically, behavior control may be *more important* for younger youth compared to older adolescents. The greater need for behavior control, regulation, and management may be due to younger adolescents' greater cognitive, social, and emotional immaturity compared to older youth (Luna et al., 2001; Paus et al., 1999; Spear, 2000). Since older adolescents are more behaviorally autonomous, less parental control is required with them compared to younger adolescents (Phinney, Kim-Jo, Osorio, & Vilhjaldsdottir, 2005). Studies show that both cognitive and emotional skills continue to develop throughout the adolescence years with younger teens demonstrating poorer perspective skills compared to older youth (Luna et al., 2001; Paus et al., 1999; Spear, 2000). Also, compared to older adolescents, younger youth are less able to understand and regulate their emotions which can contribute to inappropriate emotional responses and behavior during early adolescence (Bongers et al., 2004; Denissen et al., 2009; Frick et al., 1999). Results from the literature seem to support the notion that behavior control is more strongly linked to adjustment in younger youth. For example, Denissen et al. (2009) reported a stronger association between parent-child relationship quality and antisocial behavior for younger adolescents compared to older youth. Also, Frick et al. (1999) conducted a study involving 179 children and adolescents between the 6 and 17 years and found that child's antisocial behavior was more significantly related to parental involvement and corporal punishment for younger youth compared to older adolescents. Finally, in a study by Kowal, Krull, and Kramer (2004), the authors found a stronger link between parental differential treatment and

parent-child relationship quality and antisocial behavior among younger adolescents compared to older youth. In conclusion, there is some preliminary evidence indicating a stronger link between parental behavior control and child antisocial behavior among younger adolescents compared to older youth.

Influence of Youth Sex, Ethnicity, and Family Income

Evidence from the literature has demonstrated links between various demographic variables (e.g., youth sex, youth ethnicity, family income) and parental behavior control and youth antisocial behavior. For example, Laird et al. (2003) found a significant sex difference in developmental change in parental knowledge from ages 9-12. In particular, parental knowledge significantly increased for girls whereas it decreased for boys during the same period. Moreover, Kim, Capaldi, and Stoolmiller (2003) reported that family income was significantly and inversely related to youth antisocial behavior; income also was significantly and positively related to positive parenting (e.g., effective discipline). Shakib and colleagues (2003) reported significantly higher levels of adolescent smoking, parental monitoring, and parent-adolescent communication among Latino Americans compared to Asian Americans; no other ethnic differences were found. In sum, these findings suggest that youth sex, ethnicity, and family income are related to parenting and youth antisocial behavior.

Summary, Research Goals, and Hypotheses

In sum, evidence from the literature suggests that behavior control may be lower among older adolescents compared to younger youths. In addition, research has demonstrated a negative association between behavior control (e.g., parental knowledge) and adolescent antisocial behavior. Moreover, these associations may be stronger among younger adolescents compared to older youths. There are limitations of this literature, however. First, most studies in the literature have focused on a single dimension of behavior control (e.g., parental knowledge; Barber et al., 1994) with few investigators assessing multiple measures of this construct in a single study. A second limitation in the literature is the few studies have statistically controlled for important

demographic variables in the analyses, such as child sex, child ethnicity, and family income. To address these gaps in the literature, there were three research goals in the current study. For the first research goal, I examined if there were age differences in behavior control. In the current study, seven types of behavior control were assessed: parental knowledge, parental solicitation, adolescent disclosure, parental involvement, family rules, parent-youth openness, and parent-youth conflict. The selection of these factors was based on how behavior control has been assessed in the literature as described earlier. Each variable was examined separately in the analyses. *It was hypothesized that each measure of behavior control (except for openness) would be significantly lower among the older adolescents compared to the younger youths. Regarding parent-youth openness, the literature suggests two possibilities. One possibility was the openness would be lower among older adolescents given that they spend less time with their parents (Montemayor, 1983; Stoolmiller, 1994). Another possibility was that openness would be higher among older youths given that the parent-child relationship becomes more peer-like with age (Steinberg, 1990).*

Next, I analyzed the association between behavior control and youth antisocial behavior. *It was expected that high levels of parental knowledge, parental solicitation, adolescent disclosure, parental involvement, family rules, and parent-youth openness and low levels of parent-youth conflict would be related to low levels of antisocial behavior.* Finally, I investigated whether there were age differences in the link between behavior control and youth antisocial behavior. *It was expected that the link between behavior control (parental knowledge, parental solicitation, adolescent disclosure, parental involvement, family rules, parent-youth openness, or parent-youth conflict) and youth antisocial behavior will be stronger in magnitude in younger adolescents compared to older youth.*

CHAPTER III

METHOD

Participants and Procedure

This study involved a secondary analysis involving data collected by Child & Adolescent Relationship Lab (CARL) Project and Family Youth Development Project (FYDP) research. The CARL Project (e.g., Beck et al., 2009) focused on predictors of parental monitoring during adolescence. The sample consisted of 62 families with adolescents aged 14-18 years. Both parents (see Table 1 for primary caregiver relationship to youth; M age = 44.42, SD = 5.25; parent education = 69.4% four- year college or more; *Median* yearly income = \$50,004, SD = 31, 181; 22.6% single parents) and adolescents (M age =15.53, SD = 1.35; 46.8% female; 85.5% European American, 3.2 % African American, 1.6% Latino American, 1.6% Asian America, 8.1% other) participated in a 2-2½ hour assessment that included parenting interviews, questionnaires, and parent-child interactions tasks that were videotaped. Only the questionnaire (parent and youth reports) data will be used in this study.

The focus of the FYDP (e.g., Bosler et al., 2011) was to examine family predictors of emotion regulation during adolescence. Data collection is ongoing, but data are available from 152 families with adolescents aged 10-18. As in the CARL Project both parents (see Table 1 for primary caregiver relationship to youth; M age = 39.11, SD = 6.94; parent education = 39.9% four- year college degree or more; *Median* yearly income = \$37,696, SD = 33, 695, 42.1% single parents) and youth (M age =15.53, SD = 1.35; 52% female; 27.6% European American, 38.2% African American, 16.4% Latino American, 5.3% Native American, 12.5 other) participated in interviews, questionnaires, and parent-child interaction tasks that were videotaped. While the

CARL Project and FYDP focused on different aspects of adolescent development, both projects used identical measures of parenting, parent-child relations, and youth antisocial behavior.

The final, combined sample that was used in the analyses consisted of 214 families with adolescents aged 10-18. Data from both parents (see Table 1 for primary caregiver relationship to youth; M age = 40.64, SD = 6.92; parent education = 43.7% four- year college degree or more; $Median$ yearly income = \$42,000, SD = 33,793.82, 36.4% single parents) and youth (M age =14.06, SD = 2.35; 50.5% female; 44.4% European American, 28% African American, 12.1% Latino American, .5% Asian American, 3.7% Native American, 11.3 other) were used in the analyses. A series of ANOVAs were computed exploring whether the study variables differed by relationship status (biological mother vs. others) and primary caregiver gender. These analyses indicated that there were no significance differences.

Measures: Overview

The CARL Project and FYDP data were combined to create the factors for the proposed thesis project. All factors were created using the mean of primary caregiver and adolescent reports. All behavior control factors were based on the behavior of the youth and primary caregiver present at the assessment. In addition, all of the factors were based on the mean of available data. Internal consistency for each factor is listed in Table 2 for the full sample and each age group. The individual items for each factor (youth reports) are located in Appendix A.

Measures: Youth Age

The youth age variable was recoded into a new variable with the following age groups: 10-13 years (34.1% of sample), 14-15 (32.7%), and 16-18 (33.2%). This variable was recorded in this way because I wanted to capture the transition into high school, which often occurs around ages 14-15 years for most American youth. Also, I wanted to ensure approximately equal subsample sizes in each age group.

Measures: Behavior Control

All of the items for the behavior control factors were rated by the youths and parents using a 5-point Likert rating scale (1 = “never” to 5 = “very often”). The monitoring questionnaire was created for the CARL Project but is similar to an instrument developed by Stattin and Kerr (2000). *Parental knowledge* reflects the extent to which the parent is aware or knowledgeable of the youth’s daily activities. This factor was based on 6 items (e.g., “How often did you really know what your child did during free time?”) which was averaged to create the parent- and youth-reported factors. The final parental knowledge factor was based on the mean ($r = .26, p < .001$) of these two scores. *Parental solicitation* refers to the frequency in which parents initiate or start conversations with their children about their daily activities. This factor was computed by averaging the 6 items (e.g., “During the past year, how often did you begin or start conversations with your child about your child’s performance in school?”). The final parental solicitation factor was based on the mean ($r = .29, p < .001$) of mother and youth reports. Parent and adolescent also provided information on *child disclosure* which refers to the extent to which the child initiates or starts conversations with the parent about his/her daily activities. The parent- and youth-reported factors were created by averaging the six items (“During the past year, how often did your child start or begin a conversation with you about what your child did with friends?”). The final child disclosure variable was computed by taking the mean ($r = .23, p < .001$) of both scores.

The parental involvement and family rules questionnaires also were created for the CARL Project. There are 10 items on the *parental involvement* scale (e.g., “During the past year, how often did you and your child eat a meal together?”) which assesses the frequency in which the parent and youth spend time together. The parent- and youth-reported factors were computed by averaging the 10 factors. The final factor was created by averaging ($r = .53, p < .001$) both scores. The *family rules* instrument assesses the degree to which there are family rules governing the youth’s behavior. This variable was based on 6 items (e.g., “How often did your family have

rules about what your child did after school, at night, or on weekends?”) which were averaged. The final family rules factor that was used in the analyses was created by the mean ($r = .29, p < .001$) of the parent- and youth-reported factors.

Parental behavior control also was based on two parent-child relationship factors: openness and conflict. The *parent-youth openness* measure was adapted from the Adult-Child Relationship Scale (ACRS; Criss et al., 2003) and the Student-Teacher Relationship Scale (Pianta, 2001). This instrument assesses the extent to which the parent and child have an open, warm, and mutually responsive relationship. The scale consists of 10 items (e.g., “If upset about something, I would talk with my mother about it?”) which were averaged to create the parent- and adolescent-reported factors. The final openness factor was based on the mean ($r = .40, p < .001$) of these two scores. *Parent-youth conflict* was based on a 30-item measure (e.g., “How often in the past year did you and your child have disagreements about curfew?”) that was adapted from an instrument initially developed by Melby et al. (1998). This factor reflects the degree to which the parent and youth have conflicts or disagreements about various issues. The 30 items were averaged to create the parent- and youth-reported factors. These two scores were averaged ($r = .40, p < .001$) to create the final conflict factor.

Measures: Youth Antisocial Behavior

Youth antisocial behavior was assessed using an instrument adapted from the Problem Behavior Frequency Scale (Farrell, Danish, & Howard, 1992; Farrell, Kung, White, & Valois, 2000). This instrument contains 35 items (e.g., “During the past year, how many times did you break the rule at home?”) which were rated by the parent and adolescent using a 5-point Likert rating scale (1 = “never” to 5 = “7 or more times”). The antisocial behavior items were averaged to create the parent- and adolescent-reported factors. The final antisocial behavior factor was created by averaging ($r = .49, p < .001$) these two scores.

Analysis Overview

First, descriptive statistics for all study variables were computed. To examine the first research goal, a series of Analyses of Covariance (ANCOVAs) were computed where I examined whether age group was significantly related to each behavior control variable after statistically controlling for youth sex, youth ethnicity, and family income. If the ANCOVA was significant, Bonferroni post-hoc analysis was used for testing intergroup differences. To address the second and third research questions, a series of multiple regressions were computed where youth antisocial behavior was the dependent variable. In each regression, the control variables (youth sex, youth ethnicity, and mean centered family income) and the two youth age dummy-coded variables were entered on *Step 1*; the mean centered behavior control factor (parental solicitation, child disclosure, parental knowledge, parental involvement, family rules, parent-youth openness, or parent-youth conflict) was entered on *Step 2*, and the two-way interactions involving behavior control and youth age (one interaction factor for each dummy-coded variable) were entered on *Step 3*. Following the recommendations of Jaccard, Turrisi, and Wan (1990) youth age was recorded into two dummy-coded factors in the regression analyses: dummy-coded variable #1 (ages 10-13 and ages 14-15 = 0 and ages 16-18 = 1) and dummy-coded variable #2 (ages 10-13 and ages 16-18 = 0 and ages 14-15 = 1). Separate regressions were computed for each parental behavior regulation factor. Significant two-way interactions were interpreted following the recommendations of Jaccard, et al. (1999). There was no evidence of multicollinearity as the Variance Inflation Factor (VIF) for each independent variable entered in each regression was below 2.5. In each analysis, youth sex was coded “-1” for females and “1” for males, and ethnicity was coded “-1” for ethnic minorities and “1” for European Americans. In the ANCOVAs, age was coded “-1” for ages 10-13 years, “0” for ages 14-15, and “1” for ages 16-18.

CHAPTER IV

RESULTS

Descriptive Statistics and Bivariate Correlations

Descriptive statistics for all study variables are located in Table 3. Because the skewness statistic was not above 2.0 for any of the variables, the data were not transformed. Bivariate correlations among all of the study variables are located in Table 4. In general, all of the behavior control variables were significant intercorrelated in expected directions with three exceptions: parent-youth conflict was not significantly related to parental solicitation, child disclosure, and family rules. In addition, the analyses indicated that there were significantly higher levels of child disclosure, parental knowledge, parental involvement, family rules, and parent-youth openness for girls compared to boys; boys had significantly higher levels of antisocial behavior. The findings also showed significantly higher levels of parent-youth openness and lower levels of family income among ethnic minorities compared to European Americans. High levels of family income were related to high levels of parental solicitation and low levels of parent-youth conflict.

Research Question #1: Examine age differences in behavior control

For the first research question, I examined whether there were age differences in behavior control while statistically controlling for child sex, ethnicity, and family income. For this research question, the children sample was divided into 3 age groups with Group 1= 10-13years; Group 2= 14-15 years; and Group 3= 16-18 years. As indicated in Table 5, there were no significant age differences in parental solicitation or parental knowledge. However, youth age was significantly related to adolescent disclosure. The Bonferroni post-hoc analyses indicated that youths ages 14-

15 had significantly lower levels of disclosure compared to adolescents ages 10-13. There were no significant differences between the oldest group (ages 16-18) and the other two age groups.

The findings also indicated that there were significant age differences for parental involvement but not for family rules (see Table 6). Inspection of the post-hoc analyses indicated that youth ages 16-18 years had significantly lower levels of parental involvement compared to adolescents ages 10-13. However, there were no significant differences between youth ages 14-15 and the other two age groups.

As shown in Table 7, the ANCOVAs also demonstrated significant age differences for parent-youth openness but not parent-youth conflict. The Bonferroni post-hoc analyses indicated that youth ages 10-13 had significantly higher levels of openness compared to the other two age groups. Youth ages 15-16 years were not significantly different on parent-youth openness compared to the oldest age group (i.e., ages 16-18 years).

In sum, the findings indicated significant age differences for adolescent disclosure, parental involvement, and parent-youth openness. However, there were no significant age differences for parental solicitation, parental knowledge, family rules, and parent-youth conflict.

Research Question #2: Examine whether behavior control is related to youth antisocial behavior

For the second research goal, I examined whether behavior control was significantly related to youth antisocial behavior. As indicated in Table 8, parental solicitation was not significantly related to youth antisocial behavior after statistically controlling for youth sex, ethnicity, age, and family income. In contrast, high levels of adolescent disclosure were significantly related to low levels of antisocial behavior (see Table 9). Likewise, parental knowledge was significantly and negatively related to youth antisocial behavior as shown in Table 10. Turning to the analyses involving parental involvement and family rules (see Tables 11 and 12), the findings indicated that parental involvement, but not family rules, was significantly and inversely related to antisocial behavior after partialing out the variance explained by the demographic variables. Finally parent-youth openness and conflict were both significantly and

incrementally related to youth antisocial behavior in separate regressions (see Tables 13 and 14 respectively). Specifically, high levels of openness and low levels of conflict were significantly related to low levels of youth antisocial behavior. In sum, evidence from the regression analyses indicated that most of the measures of parental behavior control were significantly related to youth antisocial behavior in expected directions after statistically controlling for youth sex, ethnicity, age, and family income. In general, parent behavior control explained on average 12% of the variance in antisocial behavior above and beyond the demographic variables with parent-child conflict explaining the greatest percentage of variance.

Research Question #3: Examine whether youth age moderates the link between behavior control and youth antisocial behavior

The third research goal focused on whether there were significant age differences in the link between behavior control and youth antisocial behavior. Evidence for age differences (i.e., moderation) would be found if either of the two-way interaction factors (behavior control X youth age) was significant when entered on Step 3 in each regression. As indicated in Tables 6-12, none of the two-way interactions were significant. In other words, the link between behavior control and youth antisocial behavior was not significantly moderated by youth age.

CHAPTER V

DISCUSSION

There were three goals of the current investigation. First, I examined whether there were age differences in the level of behavior control (i.e., parental solicitation, child disclosure, parental knowledge, parental involvement, family rules, parent-youth openness, and parent-youth conflict). Second, I investigated the association between each measure of behavior control and youth antisocial behavior. Third, I explored whether this link was moderated by youth age. Overall, the results provided evidence for significant age differences regarding the level of some forms of behavior control. Moreover, as expected, behavior control was significantly related to adolescent antisocial behavior after controlling for youth sex, youth ethnicity, and family income. However, this link did not significantly differ by youth age.

The first research question was to examine age differences in the level of parental behavior control. Due to research demonstrating significant developmental changes within the adolescent (e.g., puberty, cognitive development; Steinberg, 1990), it was expected that parental behavior control would be significantly lower among older adolescents. In general, the findings were consistent with this expectation in that younger youth had significantly higher levels of adolescent disclosure, parental involvement, and parent-youth openness compared to older youth. One possible reason for these findings is that since older youth may be less willing to spend time with their parents (Larson & Richards, 1991; Larson, Richards, Moneta, Holbeck, & Duckett, 1996), they are also less willing to share with them about their daily activities compared to

younger youth. Another explanation is that due to the cognitive advances (e.g., perspective taking; abstract thinking) and physical transformations that occur during adolescence (Paikoff & Brooks-Gunn, 1991; Steinberg, 1990), both parents and their children may begin to feel that parents can begin to decrease their level of behavior control and management and give the youth greater levels of autonomy and independence.

On the other hand, age differences were not found for parental solicitation, parental knowledge, family rules, and parent-youth conflict. One possibility is that these specific types of parental behavior control may be less affected by the developmental milestones that characterize adolescence, such as puberty, cognitive development, and development of perspective taking (Steinberg & Morris, 2001). Perhaps, these dimensions of behavior control are critical throughout adolescence regardless of youth's age. In addition, most parents have rules and curfews for their children at all ages. For example, when children turn 16 years and acquire drivers' licenses, they still need family rules that guide them. Different rules and guidelines may lead to parent-youth conflict depending on how much the youth are trying to negotiate with their parents regarding certain rules; hence, parent-youth conflict is critical in throughout the three age groups.

While there were no significant differences between the middle age group (ages 14-15 years) and the older group (ages 16-18 years), inspection of the adjusted means suggest a curvilinear linear relation between age and two of the behavior control variables: adolescent disclosure and parent-youth openness. Specifically, the adjusted means for each decreased from ages 10-13 to ages 14-15 and then increased slightly (albeit not significantly) at ages 16-18. One possible explanation for this increase is that parent-child relationship becomes more peer-like in older adolescence (Steinberg, 1990; Steinberg & Morris, 2001), which may explain higher levels of openness and disclosure, both of which may be indicators of psychological intimacy. It is also possible that because adolescents see their parents more as peers, they may feel less threatened about communicating information about their daily activities to their parents. Future research examining this possibility is needed.

For the second research goal was to examine whether behavior control was significantly related to youth antisocial behavior after controlling for youth sex, youth ethnicity, and family income. The findings indicated that high levels of adolescent disclosure, parental knowledge, parental involvement, and parent-youth openness and low levels of parent-youth conflict were related to low levels of youth antisocial behavior. These findings are consistent with previous studies findings significant links between behavior control and adolescent behavior (e.g., Criss et al. 2003; Herrenkohl et al., 2006; Laird et al. 2009). It is possible that through behavior control parents are able to make sure that their children avoid delinquent-reinforcing environments and peers and thus not engage in antisocial and deviant behavior (Barber et al., 1994; Patterson et al., 1992; Stattin & Kerr, 2000). Specifically, by being aware of their children's friends and daily activities and/or personally spending time with them, parents may be better able to intervene if inappropriate behavior or peers appear. The findings also suggest that having a parent-child relationship marked by high levels of openness/warmth and low levels of conflict/coercion is another means of regulating adolescent behavior, in part because adolescents tend to be more open to parental socialization efforts (Hirschi, 1969; Kochanska, 1997).

The final research goal focused on whether there were significant age differences in the link between behavior control and youth antisocial behavior. Contrary to the findings of previous studies (Denissen et al., 2009; Frick et al., 1999; Kowal et al., 2004), I did not find any evidence that age moderated the link between behavior control and adolescent behavior. In other words, behavior control was related to youth antisocial behavior regardless of age. One explanation for these findings is that the previous studies examining this issue (e.g., Frick et al., 1999) did not statistically control for important demographic variables, such as child sex, child ethnicity, and family income. It is also possible that the statistical approach that I used to test for moderation may have been too conservative. Indeed, according to McClelland and Judd (1993), finding significant two-way interactions in non-experimental studies can be especially challenging. Finally, one possibility is that behavior control (at least as assessed in the current study) is simply

equally important across adolescence. That is, despite the developmental changes that occur within the adolescent and within the parent-child relationship (e.g., Steinberg & Morris, 2001), parental efforts to regulate their children continues to play an important role in socialization throughout adolescence.

One limitation of current investigation is the cross-sectional design. While it was theorized that behavior control would lead to lower levels of antisocial behavior, it is equally possible that high levels of antisocial behavior control lead to low levels of behavior control (e.g., Laird et al., 2003). Indeed, researchers have long argued for so-called “child effects”: the idea that child behavior (e.g., antisocial behavior) may elicit certain forms of parenting (e.g., Bell, 1968). Recent longitudinal research has shown that negative child behavior (e.g., externalizing behavior, difficult temperament) was significantly related to low levels of subsequent behavior control (e.g., parental knowledge, parent-youth openness; Laird et al., 2003; Trentacosta, et al., in press) and high levels of negative parenting (e.g., physical discipline; Lansford et al., 2011).

Another limitation of the current investigation was the correspondence between parent and youth reports of behavior control was low for some of the factors which may have influence the results. While some of these correlations were low, it was felt that this was preferable and more parsimonious to running separate analyses for parent and youth reports. Another limitation is that the present study only focused on antisocial behavior while parent behavior control could be related to other factors such as substance abuse and low academic grades (e.g., Bean, Barber, & Crane, 2006). Future research also is recommended to investigate whether the link between parental behavior control and antisocial behavior is moderated by parent sex. Although there were sufficient numbers of biological fathers who were the primary caregivers in the current study, previous research (e.g., Repinski & Shonk, 2002) found major differences between mothers’ and fathers’ parenting behavior (e.g., warmth/support) in the link between parenting behavior and adolescent problem behavior. Specifically, mothers’ reports of warmth/supportive behavior were more strongly related to adolescent antisocial behavior compared to father’s warmth/support.

Thus, it is possible that there may be similar parent sex differences regarding the link between behavior control and youth behavior.

In conclusion, the findings from the current investigation found some evidence for age differences in the levels of behavior control during adolescence. Moreover, the results showed that most of the indicators of behavior control were significantly related to youth antisocial behavior even after statistically controlling for youth sex, ethnicity, age, and family income. However, there was no evidence that the link between behavior control and antisocial behavior was moderated by youth age. Overall, the findings from the current study have implications for future interventions. First, the findings suggest that interventions need to acknowledge that some forms of behavior control do change during adolescents, partly in response to developmental changes that occur within the adolescent and parent-adolescent relationship. Second, the findings indicate that, in general, behavior control is critical in the development of antisocial behavior for all adolescents irrespective of age.

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APPENDICES

Table 1: *Primary caregiver relationship to youth*

	CARL Project (N = 62)	FYDP (N = 152)	Combined Sample (N = 214)
	Valid Percent	Valid Percent	Valid Percent
Biological Mother	80.6	83.6	82.7
Biological Father	14.5	8.6	10.3
Adoptive Mother	3.2	2.0	2.3
Step-father	1.6	0.7	.9
Foster Mother	0.0	0.7	.5
Mother's Partner	0.0	0.7	.5
Grandparent	0.0	2.6	1.9
Sibling	0.0	1.3	.9

Table 2: *Internal consistency (alpha) for all study variables*

		Full Sample	Ages 10-13 Years	Ages 14-15 Years	Ages 16-18 Years
Parental Knowledge	Parent Reports	.84	.87	.81	.82
	Youth Reports	.84	.92	.87	.82
Parental Solicitation	Parent Reports	.84	.83	.87	.82
	Youth Reports	.82	.85	.75	.83
Adolescent Disclosure	Parent Reports	.84	.86	.89	.86
	Youth Reports	.83	.88	.83	.74
Parental Involvement	Parent Reports	.79	.79	.76	.81
	Youth Reports	.81	.84	.79	.76
Family Rules	Parent Reports	.87	.91	.87	.83
	Youth Reports	.87	.90	.86	.87

Table 2 continues

Table 2 (cont.)

		Full Sample	Ages 10-13 Years	Ages 14-15 Years	Ages 16-18 Years
Parent-Youth Openness	Parent Reports	.83	.80	.91	.75
	Youth Reports	.91	.92	.89	.90
Parent-Youth Conflict	Parent Reports	.92	.93	.91	.93
	Youth Reports	.92	.95	.92	.85
Youth Antisocial Behavior	Parent Reports	.92	.93	.91	.91
	Youth Reports	.87	.92	.89	.81

Table 3: *Descriptive statistics*

	<i>N</i>	<i>M</i>	<i>SD</i>	Range	Skewness	
					Statistic	<i>SE</i>
Parental Solicitation	214	3.56	.66	1.67 - 5.00	-.05	.17
Child Disclosure	214	3.05	.72	1.33 - 5.00	.33	.17
Parental Knowledge	214	3.75	.71	1.50 - 5.00	-.34	.17
Parental Involvement	214	3.34	.61	1.60 - 4.90	-.12	.17
Family Rules	214	3.51	.80	1.17 - 5.00	-.23	.17
Parent-Youth Openness	214	3.73	.67	1.30 - 4.95	-.43	.17
Parent-Youth Conflict	214	2.13	.53	1.22 - 3.72	.62	.17
Youth Antisocial Behavior	214	1.50	.38	1.00 - 3.14	1.64	.17

Table 4: *Bivariate correlations*

	2	3	4	5	6	7	8	9	10	11
<u>Behavior Control:</u>										
1. Parental Solicitation	.63***	.39***	.43***	.58***	.46***	.08	-.10	-.04	-.07	.18*
2. Child Disclosure		.54***	.55***	.50***	.62***	-.11	-.23***	-.29***	-.10	.03
3. Parental Knowledge			.43***	.55***	.51***	-.34***	-.38***	-.17*	.01	.12
4. Parental Involvement				.39***	.51***	-.16*	-.31***	-.22**	-.13	.09
5. Family Rules					.38***	.03	-.09	-.18**	-.02	.06
6. Parent-Youth Openness						-.28***	-.36***	-.32***	-.18**	.03
7. Parent-Youth Conflict							.58***	.12	-.07	-.14*
<u>Youth Behavior:</u>										
8. Antisocial Behavior								.18**	.11	-.08
<u>Covariates:</u>										
9. Youth Sex _a									.06	-.02
10. Youth Ethnicity _b										.36***
11. Family Yearly Income										

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans)

Table 5: ANCOVAs examining age differences in parental solicitation, adolescent disclosure, and parental knowledge controlling for youth sex, youth ethnicity, and family income

	Parental Solicitation	Adolescent Disclosure	Parental Knowledge
<u>Youth Age_a:</u>			
<i>F</i> statistic	2.67	3.71*	2.35
η_p^2	.03	.04	.02
<u>Group 1: Ages 10-13 Years</u>			
Adjusted Mean (SE)	3.56 (.08)	3.22 (.08)	3.91 (.09)
<u>Group 2: Ages 14-15 Years</u>			
Adjusted Mean (SE)	3.44 (.08)	2.90 (.08)	3.71 (.09)
<u>Group 3: Ages 16-18 Years</u>			
Adjusted Mean (SE)	3.70 (.08)	3.00 (.08)	3.65 (.09)
<u>Significant Intergroup Differences:</u>		1 > 2	
<u>Covariates:</u>			
Youth Sex _b : <i>F</i> statistic	.39	19.54**	4.79*
Youth Ethnicity _c : <i>F</i> statistic	3.52	.74	.00
Family Yearly Income: <i>F</i> statistic	8.47**	1.02	3.43

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = Coded -1 (ages 10-13 years), 0 = (ages 14-15), 1 (ages 16-18); _b = coded -1 (female) and 1 (male); _c = coded -1 (ethnic minorities) and 1 (European Americans).

Table 6: ANCOVAs examining age differences in parental involvement and family rules controlling for youth sex, youth ethnicity, and family income

	Parental Involvement	Family Rules
<u>Youth Age_a:</u>		
<i>F</i> statistic	6.19**	.47
η_p^2	.06	.01
<u>Group 1: Ages 10-13 Years</u>		
Adjusted Mean (SE)	3.55 (.07)	3.53 (.10)
<u>Group 2: Ages 14-15 Years</u>		
Adjusted Mean (SE)	3.31 (.07)	3.54 (1.0)
<u>Group 3: Ages 16-18 Years</u>		
Adjusted Mean (SE)	3.19 (.07)	3.42 (.10)
<u>Significant Intergroup Differences:</u>	1 > 3	
<u>Covariates:</u>		
Youth Sex _b : <i>F</i> statistic	8.64**	4.58*
Youth Ethnicity _c : <i>F</i> statistic	2.92	.05
Family Yearly Income: <i>F</i> statistic	5.76*	.96

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = Coded -1 (ages 10-13 years), 0 = (ages 14-15), 1 (ages 16-18); _b = coded -1 (female) and 1 (male); _c = coded -1 (ethnic minorities) and 1 (European Americans).

Table 7: ANCOVAs examining age differences in parent-youth openness and parent-youth conflict controlling for youth sex, youth ethnicity, and family income

	Parent-Youth Openness	Parent-Youth Conflict
<u>Youth Age_a:</u>		
<i>F</i> statistic	9.31***	.29
η_p^2	.02	.00
<u>Group 1: Ages 10-13 Years</u>		
Adjusted Mean (SE)	3.97 (.07)	2.08 (.06)
<u>Group 2: Ages 14-15 Years</u>		
Adjusted Mean (SE)	3.52 (.07)	2.12 (.06)
<u>Group 3: Ages 16-18 Years</u>		
Adjusted Mean (SE)	3.65 (.08)	2.15 (.06)
<u>Significant Intergroup Differences:</u>	1 > 2, 3	
<u>Covariates:</u>		
Youth Sex _b : <i>F</i> statistic	25.25***	2.53
Youth Ethnicity _c : <i>F</i> statistic	3.11	.00
Family Yearly Income: <i>F</i> statistic	2.54	3.79

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = Coded -1 (ages 10-13 years), 0 = (ages 14-15), 1 (ages 16-18); _b = coded -1 (female) and 1 (male); _c = coded -1 (ethnic minorities) and 1 (European Americans).

Table 8: *Multiple regressions examining youth age differences in link between parental solicitation and child antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Parental Solicitation	-.05	.04	-.08	.01
3	PS X Dummy-Coded Age #1	.08	.09	.09	.00
	PS X Dummy-Coded Age #2	.03	.10	.03	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); PS = parental solicitation.

Table 9: *Multiple regressions examining youth age differences in link between adolescent disclosure and youth antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Adolescent Disclosure	-.08	.04	-.15*	.02*
3	AD X Dummy-Coded Age #1	-.01	.09	-.01	.00
	AD X Dummy-Coded Age #2	.03	.09	.03	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); AD = adolescent disclosure.

Table 10: *Multiple regressions examining youth age differences in link between parental knowledge and youth antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Parental Knowledge	-.16	.04	-.31***	.09***
3	PK X Dummy-Coded Age #1	-.15	.09	-.14	.02
	PK X Dummy-Coded Age #2	-.12	.08	-.13	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); PK = parental knowledge.

Table 11: *Multiple regressions examining youth age differences in link between parental involvement and youth antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Parental Involvement	-.16	.04	-.26***	.06***
3	PI X Dummy-Coded Age #1	.01	.10	.09	.01
	PI X Dummy-Coded Age #2	.13	.10	.11	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); PI = parental involvement.

Table 12: Multiple regressions examining youth age differences in link between family rules and youth antisocial behavior

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Family Rules	-.02	.03	-.03	.00
3	FR X Dummy-Coded Age #1	-.02	.08	.03	.00
	FR X Dummy-Coded Age #2	.01	.08	.01	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); FR = family rules.

Table 13: *Multiple regressions examining youth age differences in link between parent-youth openness and youth antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Parent-Youth Openness	-.20	.04	-.36***	.10***
3	PYO X Dummy-Coded Age #1	-.03	.10	-.03	.00
	PYO X Dummy-Coded Age #2	-.04	.09	-.05	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); PYO = parent-youth openness.

Table 14: *Multiple regressions examining youth age differences in link between parent-youth conflict and youth antisocial behavior*

Step	Predictors	Youth Antisocial Behavior			
		Unstandardized B	SE	Std. β	ΔR^2
1	Youth Sex _a	.05	.03	.15*	.09**
	Youth Ethnicity _b	.05	.03	.14	
	Family Yearly Income	.00	.00	-.15*	
	Dummy-Coded Youth Age #1 _c	.14	.06	.18*	
	Dummy-Coded Youth Age #2 _d	.01	.06	.01	
2	Parent-Youth Conflict	.42	.04	.58***	.32***
3	PYC X Dummy-Coded Age #1	.13	.10	.09	.01
	PYC X Dummy-Coded Age #2	.12	.10	.09	

Note: *** $p < .001$, ** $p < .01$, * $p < .05$; _a = coded -1 (female) and 1 (male); _b = coded -1 (ethnic minorities) and 1 (European Americans); _c = coded 0 (ages 10-13 and ages 14-15) and 1 (ages 16-18); _d = coded 0 (ages 10-13 and ages 16-18) and 1 (ages 14-15); PYC = parent-youth conflict.

Appendix A: List of Study Variables and Items (Youth Reports)

Note: The parent reported items were similar but written from the parent’s perspective.

Parental Solicitation:

During the past year, how often did your mother begin or start conversations with you about:

	1	2	3	4	5
1. what you did with friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. what you did during free time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. what you did after school, at night, or on weekends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. your performance in school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. your use of the computer and Internet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. what you watched on TV or saw at the movies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Child Disclosure:

How often did you begin or start conversations with your mother about:

	1	2	3	4	5
1. what you did with friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. what you did during free time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. what you did after school, at night, or on weekends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. your performance in school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. your use of the computer and Internet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. what you watched on TV or saw at the movies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parental Knowledge:

How often did your mother really know:

	1	2	3	4	5
1. what you did with friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. what you did during free time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. what you did after school, at night, or on weekends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. your performance in school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. your use of the computer and Internet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. what you watched on TV or saw at the movies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parental Involvement:

<i>During the past year, how often did you and your mother:</i>	1	2	3	4	5
1. eat a meal together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. go shopping together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. go to the movies together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. go to a sporting event together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. go to church together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. do something fun together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. watch TV, a videotape, or a DVD together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. do household chores together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. play a board game or cards together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. drive in the car together?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Family Rules:

<i>How often did your family have rules about:</i>	1	2	3	4	5
1. what you did with friends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. what you did during free time?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. what you did after school, at night, or on weekends?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. your performance in school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. your use of the computer and Internet?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. what you watched on TV or saw at the movies?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parent-Youth Openness:

To what extent are the following statements true about your relationship with your mother?

	1	2	3	4	5
1. If upset about something, I would talk with my mother about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I liked telling my mother about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It was easy for my mother to be in tune with what I was feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I was open about sharing feelings and telling my mother about how things were going.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. My mother liked asking me about how things were going.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. If my mother was upset about something, she would talk with me about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. My mother liked telling me about herself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parent-Youth Openness: (cont.)

	1	2	3	4	5
8. It was easy to be in tune with what my mother was feeling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. My mother was very open about sharing feelings and telling me how things were going.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I liked asking my mother about how things were going with her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parent-Youth Conflict:

Please indicate how often in the past year you and your mother had disagreements about the following issues.

	1	2	3	4	5
1. Activities with friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Alcohol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Attitudes/respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Breaking family rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Choice of friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Chores at home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Church	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Clothes and/or appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Curfews	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Dating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Discipline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Family time together	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Fighting with brothers/sisters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Free time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Getting to school on time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Grades	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Homework	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Keeping room clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Lying	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Making too much noise at home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Manners	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Parent-Youth Conflict: (cont.)

	1	2	3	4	5
24. Money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Movies/TV	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Tobacco	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Transportation to places or use of car	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Trouble at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Trouble with the law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Use of computer/Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Other: _____	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Youth Antisocial Behavior:

During the past year, how many times did you...	1	2	3	4	5
1. Break a rule at home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Break a rule at school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Break a rule somewhere other than home or school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Get into trouble at home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Get into trouble at school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Get into trouble somewhere other than home or school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Get in a fight in which someone was hit?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Threaten to hit another kid?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Threaten a teacher?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Threaten someone with a weapon?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Shove or push another kid?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Hit or slap another kid?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Throw something at someone?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Put down someone?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Spread a rumor?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Pick on someone?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Exclude someone?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Insult someone's family?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Give mean looks?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Start a fight between others?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Youth Antisocial Behavior: (cont.)

	1	2	3	4	5
21. Skip school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Damage property?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Steal from someone?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Cheat on a test?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Shoplift?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Get suspended from school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Get drunk?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Smoke cigarettes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Drink beer?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Drink wine or wine coolers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Drink liquor?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Smoke marijuana?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Use over-the-counter “pep” or energy pills?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Use an over-the-counter medicine just to get high?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Use a prescription medicine just to get high?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

VITA

Eunice W Menja

Candidate for the Degree of

Master of Science

Thesis: ASSOCIATION BETWEEN PARENTAL BEHAVIOR CONTROL AND YOUTH

ANTISOCIAL BEHAVIOR: AN EXAMINATION OF AGE DIFFERENCES

Major Field: Human Development and Family Science

Biographical:

Education:

Completed the requirements for the Master of Science in Human Development and Family Science in July, 2011

Completed the requirements for the Development your major at Oklahoma State University, Stillwater, Oklahoma in Bachelor of Science in Human Development and Family Science at Oklahoma State University, Stillwater, Oklahoma/USA in 2008.

Experience:

May 2009 to Date: Social Services Specialist II, Oklahoma Department of Human Services

August 2008 to May 2009: Graduate Research/Teaching Assistant, Oklahoma State University

June 2009 to Date: Director and Founder of Upendo Kids International

Name: Eunice W Menja

Date of Degree: July, 2011

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: ASSOCIATION BETWEEN PARENTAL BEHAVIOR CONTROL AND
YOUTH ANTISOCIAL BEHAVIOR: AN EXAMINATION OF AGE DIFFERENCES

Pages in Study: 53

Candidate for the Degree of Master of Science

Major Field: Human Development and Family Science

Scope and Method of Study:

The goals of the study were to examine age differences in behavior control, links between behavior control and youth antisocial behavior, and whether this link was moderated by age. The sample consisted of 214 families with adolescents aged 10-18.

Findings and Conclusions:

Results indicated that behavior control was significantly lower among younger adolescents. It was also evident that parent behavior control was associated with antisocial behavior even after controlling for youth age, sex, ethnicity, and family income. Moreover, the link between parent behavior control and youth antisocial behavior was not moderated by age. In summary, this study broadens theory and research supporting the importance of behavior control during adolescence.

ADVISER'S APPROVAL: Dr. Michael M. Criss
