

FACILITATORS AND IMPEDIMENTS TO MOTHERS' MONITORING KNOWLEDGE
AND ADOLESCENT ADJUSTMENT IN AFRICAN AMERICAN AND LATINO LOW-
INCOME FAMILIES

By

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ABSTRACT

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African and Latino American adolescents are disproportionately represented among adolescents in poverty. Adolescents living in poverty is at high risk for both externalizing and internalizing behavior problems and poor academic achievement. To investigate protectors for this specific population, this study examined facilitators and impediments to mothers' monitoring knowledge and whether mothers' monitoring knowledge prevents adolescents' internalizing and externalizing behavior problems and delinquency among African American and Latino low-income families. Four main questions were addressed: 1) how does mothers' monitoring knowledge change over time? 2) what factors impede mothers' knowledge? 3) what factors facilitate mothers' knowledge? and 4) how mothers' long-term knowledge predicts externalizing and internalizing behavior and school delinquency in late adolescence. All the questions were addressed by using the *Three-City Study*. The present study focused on the adolescents being reared by continuous caregivers and participating in all the three waves of interviews, yielding 319 African American and 354 Latino mother-adolescent dyads.

Analyses involved four steps: 1) to conduct growth mixture modeling to identify trajectory groups of mothers' monitoring knowledge; 2) to conduct logistic/multinomial logistical regression to examine relations of trajectory groups of mothers' knowledge with familial, community, and adaptive cultural factors; 3) to conduct multiple regression to predict adolescents' externalizing behavior problems and school delinquency with trajectory groups of mothers' knowledge; and 4) to conduct ordinal logistic regression to predict adolescents' clinical

classification for internalizing behavioral problems with trajectory groups of mothers' knowledge. The findings suggest that for both ethnicities, the majority of mothers maintained monitoring knowledge in high levels over time. This study identified family routine as a common facilitator and harsh discipline as a common impediment to mothers' monitoring knowledge for both ethnicities. Two facilitators were identified only for the African American families, i.e., grandmothers' childrearing involvement and neighborhood cohesion. Adolescent gender difference in mothers' monitoring knowledge was only found for the African American families, with the mothers who rear boys being more likely to experience a sharp decline in monitoring knowledge than those who rear girls. Positive implications of mothers' monitoring knowledge for developmental outcomes were found. Specifically, stable high or slowly declining monitoring knowledge in adolescence prevents maladjustment, particularly in terms of internalizing behavior for the African American adolescents and externalizing behavior for the adolescents in both groups.

The present findings shed light on potential preventions and/or interventions to improve adolescent developmental outcome and family environment of low-income African Americans and Latinos. Social workers can advance preventions to educate low-income African American and Latino mothers about the positive implications of gaining information about their children's daily life in adolescence for preventing externalizing and/or internalizing behavior problems. My findings also indicate the potential benefit of programs that aim to promote low-income mothers gaining monitoring knowledge, such as establishing family routine. Specifically for the African American mothers, this study advocates developing programs aiming to strengthen mutual supports and trust among neighbors and understand positive implications of grandmothers' childrearing support.

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To my beloved father in heaven, mother and the older brother, and God.

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Chapter 1: Introduction

The United States has been classified as one of the highest-income economies (with Gross National Income (GNI) per capita of more than \$12,196) among many industrialized nations (World Bank, 2011). Yet, a large proportion of American children under the age of 18 lives in poverty, with 21% living in poor families (where household incomes are less than 100% of the federal poverty thresholds¹) and 22% living in low-income families (where household incomes are less than 200% of the federal poverty thresholds)(National Center for Children in Poverty, 2012, June 5). Furthermore, American children are more likely to live in low-income households compared to children in many other wealthy countries; for example, an American child is twice to three times more likely to live in a family with income below 125% of the poverty threshold than a child in Finland, Sweden, or Austria (Child Trends, 2009). In the U.S., rates of child poverty vary by race/ethnicity. African and Latino American children are disproportionately represented among children living in low-income households. Combination of the two ethnicities comprises of 38% of all children, but represents approximately 53% of children living in low-income households (Addy & Wight, 2012, February; a report from National Center for Children in Poverty). Children of the two ethnicities are at higher risk than European and Asian American children in living in low-income households. In 2010, compared to only 31% of European American children and 31% of Asian American children, 64% of

¹ The federal poverty thresholds are cut-off points of the dollar amounts used to evaluate a person's or a family's poverty status (U.S. Census Bureau, October 26, 2012). Household incomes less than 100% of the federal poverty thresholds mean that the incomes are exactly below the thresholds; household incomes less than 200% of the federal poverty thresholds mean that the incomes are below twice the thresholds. The thresholds are determined based on the size of a household and ages of the members. In 2011, for example, the thresholds are \$23,581 for a family of four members and \$18,106 for a family of three members; both cases have one child under the age of 18. Yet, research indicates that in order to maintain basic living needs, families need at least twice dollar amounts of the federal poverty thresholds (Cauthen & Fass, 2008). Accordingly, families with incomes below 200% of the federal poverty thresholds are classified into low-income families.

African American children and 63% of Latino American children under the age of 18 lived in low-income households (Addy & Wight, 2012, February).

Adolescents growing up in poverty are at high risk for both externalized and internalized problems (e.g., McLoyd & Smith, 2002; Aneshensel & Sucoff, 1996; also see review of Bradley & Crowyn, 2002) and poor academic achievement (see meta-analytic reviews of Sirin, 2005 and White, 1982). These adolescents' disposition to maladjustment is associated with their exposure to a number of socio-contextual risk factors, such as unsafe neighborhoods and deviant peers in school (e.g., McLoyd et al., 2009). Among many socio-contextual factors, parents' monitoring knowledge (i.e., "knowledge gained about children and their activities", p.383, Racz & McMahon, 2011) has been portrayed as one important protective factor that prevents these adolescents from harm, thereby benefiting their adjustment, and resulting in fewer behavioral problems and higher rates of high school graduation (see review of Racz & McMahon, 2011).

Although empirical research has noted the protective role of parents' monitoring knowledge of adolescents' whereabouts and activities, a number of gaps remain in contemporary research on parents' knowledge about adolescents in low-income households. First, very little is known about longitudinal associations between parents' monitoring knowledge and adolescent adjustment in terms of externalizing and internalizing behavior and school delinquency in low-income households. Although some studies have examined the longitudinal role of parents' monitoring knowledge (e.g., Kilgore, Snyder, & Lentz, 2000; Patrick et al., 2005), they focus on different developmental courses (e.g., from early childhood to early adolescence) and only on externalized outcomes (e.g., conduct problems). Second, since parents' monitoring knowledge is an important protector for adolescents in low-income households, there is a need to understand what factors facilitate parents' knowledge of children and their activities. However, there is a

significant lack of research examining the impediments and facilitators to parents' knowledge among this population from early to late adolescence. Comprehension of the impediments and facilitators to parents' monitoring knowledge in this time period will provide low-income parents with useful strategies to prevent their adolescents from problem behaviors. Third, since Latino and African Americans have their own cultural traditions distinctive from the majority of the US (i.e., Whites; see review of Yasui & Dishion, 2007), in the low-income households of the two ethnic groups there might be unique family and community assets being rooted in their cultural traditions that can facilitate parents' monitoring knowledge. However, previous studies on Latino or African American low-income households primarily focus on barriers to parents' monitoring knowledge (Kilgore et al., 2000) or general facilitators to parents' knowledge across different ethnicities of low-income households (Patrick et al., 2005). The specific cultural assets that may benefit parents' monitoring knowledge have been underexplored. Finally, a body of research and theories on children and adolescents in poverty mainly focus on socio-contextual risk factors for family dynamics and child adjustment, including the examples of the family stress model (Conger & Elder, 1994; Conger & Donnellan, 2007) and the family process model of economic hardship and adjustment (Conger et al., 1992). Although current scholarly research has also identified some protective factors (e.g., parents' social networks and good parent-child relationship qualities) for this population (e.g., Hill, Bush, & Roosa, 2003; McCabe & Clark, 1999; McLoyd, 1990a), more efforts are needed to explore other positive assets in both family and other immediate contexts (e.g., neighborhoods) for family dynamics and child development.

To fill the gaps in existing literature, the purpose of the present study is threefold: a) to examine patterns of trajectories of mothers' monitoring knowledge; b) to examine the impediments/facilitators to mothers' knowledge, including family, neighborhood, and adaptive

cultural factors; and c) to examine the associations between the patterns of the trajectories of mothers' knowledge and adolescents' externalizing and internalizing behavior outcomes and school delinquency for African and Latino American low-income households. For my dissertation study, I aim to address the following research questions:

Q1: For the first research purpose—to examine patterns of trajectories of parents' monitoring knowledge, two respective sub-questions were addressed:

- 1.1) How does mothers' monitoring knowledge change over time among adolescents in low-income families for African and Latino Americans?
- 1.2) Are there different patterns of trajectories of mothers' knowledge between African and Latino Americans?

Q2: For the second research purpose—to examine the impediments/facilitators to these patterns, three respective sub-questions were addressed:

- 2.1) What socio-contextual factors in neighborhoods and the family context, factors of adaptive culture, and adolescents' own characteristics impede mothers' monitoring knowledge over time for African and Latino Americans?
- 2.2) What socio-contextual factors in neighborhoods and the family context, factors of adaptive culture, and adolescents' own characteristics facilitate mothers' monitoring knowledge over time for African and Latino Americans?
- 2.3) Are there any differences in impediments and facilitators to mothers' monitoring knowledge over time between African and Latino Americans?

Q3: For the third research purpose—to examine the associations between the patterns of the trajectories of parents' monitoring knowledge and adolescents' adjustment, two respective sub-questions were addressed:

- 3.1) How is trajectory of mothers' knowledge associated with various domains of developmental outcomes, including externalizing and internalizing behavior and school delinquency in late adolescence in low-income households for African and Latino Americans?
- 3.2) Are there any differences in patterns of associations between African and Latino Americans over time?

All the above questions were addressed by using a three-wave longitudinal and large-scale survey dataset of the *Welfare, Children & Families: A Three-City Study* (Cherlin, 1999; Cherlin et al., 2001; Angel, Burton, Chase-Lansdale, Cherlin, & Moffitt, 2009). This study focuses on low-income households with at least one child between aged 0-4 or 10-14 in three cities — Boston, Chicago, and San Antonio. A household was eligible if the household income was less than 200% of the federal poverty threshold. The study focused on the child and the child's female caregivers. Female caregivers are referred to as mothers thereafter, given that over 90% of them were biological or adoptive mothers. At wave 1, 2,402 low-income families participated in this study. This dataset consists of 1,160 mother-adolescent pairs at wave 1, with 46% African American, 48% Latino, and 6% European American pairs. The majority of households (about 88%) in this study were headed by single mothers and the focus child's biological father did not reside in the household. For the purpose of this study, only African American and Latino pairs will be focused. The majority of Latino adolescents (93.4%) were U.S.-born. The original sample of adolescents aged from 10-14 years in 1999; wave 2 data were collected between 2000 and 2001; and wave 3 data were collected between 2005 and 2006 when the adolescents were aged from 16-20 years.

The present study would contribute to the understanding of family dynamics and adolescent adjustment in African American and Latino low-income households. Empirical research based on national data (drawn from the National Longitudinal Study of Youth 1997) has noted that low-socioeconomic status (SES) parents of African and Latino origins are less likely to enact effective parenting practices (e.g., failure to monitor and set limits for their children) than their middle- or high-SES counterparts (e.g., Jones-Sanpei, Day, & Holmes, 2009); and adolescents in these families are thereby disposed to maladjustment (see reviews of Bradley & Crowyn, 2002 and Sirin, 2005). The present research seeks to enhance understanding of 1) whether there are any similar factors that facilitate parents' monitoring knowledge for both African and Latino American low-income families over time and further benefit adolescents' adjustment, and 2) whether African and Latino Americans bear their unique family and community assets that can facilitate parents' monitoring knowledge. Exploration of these questions will provide knowledge for policy-makers and social-workers to develop culturally sensitive prevention and intervention actions for the purposes of bettering the development and family environment of Latino and African American adolescents living in poverty.

Chapter 2: Theoretical Foundations

The present study explores the potential impediments and facilitators to parents' monitoring knowledge by investigating the socio-environmental and cultural factors for African American and Latino adolescents. In understanding the interconnections between adolescents' cultural and socio-environmental factors and formation of parental knowledge, this study is grounded in two theoretical foundations: a) García Coll et al.'s integrative model (1996) for the study of developmental competencies in minority children and b) Belsky's process model of the determinants of parenting (Belsky, 1984).

2.1 Integrative Ecological Model of Development of Minority Children

Integrating ecological and cultural perspectives, García Coll and colleagues (1996) proposed an integrative model that portrays how ethnic minority children's developmental courses are shaped by interactions between their distal ecologies and proximal ecologies in which children have direct contact (including the settings outside the family [communities, schools, and health care system], adaptive culture of their ethnic groups, and family experiences) (see Fig. 1). This model highlights that ethnic minority children's developmental courses are distinctive from the course of the majority (i.e., White) because they bear unique experiences of distal and proximal ecologies. In this model, distal ecologies refer to those contexts in which children do not have direct contact but are influenced indirectly through the mediation of proximal ecologies. The elements of distal ecologies include *social position*, *segregated circumstances*, and *social stratification mechanisms*. Social position refers to a constellation of attributes including race, social class, ethnicity, and gender. For ethnic minority children, their unique social position (primarily their minority status related to their race and ethnicity) leads to experiences of *social stratification mechanisms* (i.e., racism, prejudice, and discrimination) and

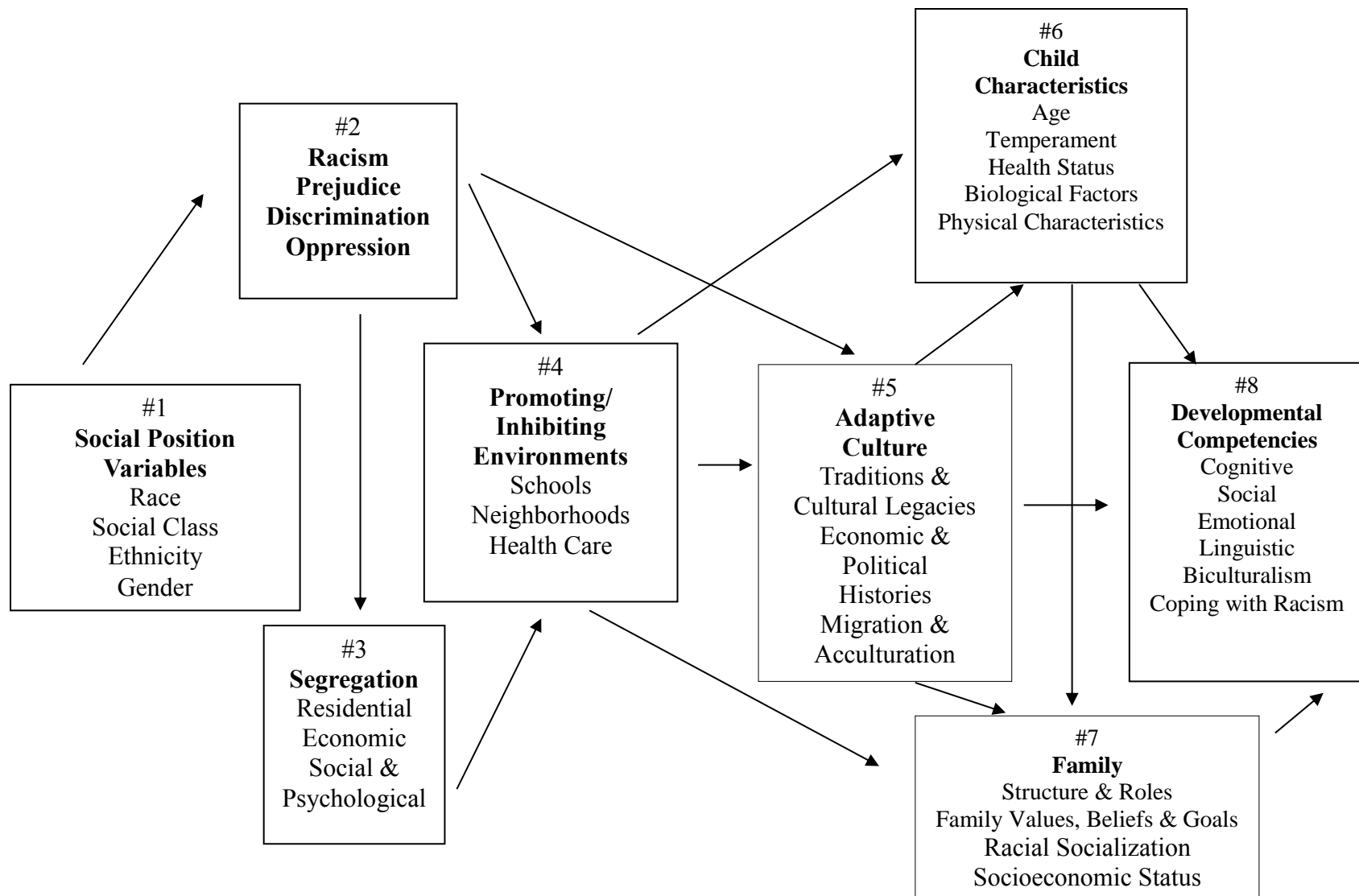


Figure 1. Garcia Coll et al.'s Integrative Model for the Study of Developmental Competencies in Minority Children

further contributes to the segregated circumstances. Three common types of segregation circumstances for ethnic minorities include: a) *residential segregation*: ethnic minorities likely concentrate in ethnic enclaves because their social position and the social stratification mechanisms limit their geographic mobility; b) *economic segregation*: due to the linguistic barrier and the cultural unfamiliarity, ethnic minorities likely engage in low-paid, low-skilled, and labor-intense jobs; this commonly takes place among low-SES immigrants; and c) *social and psychological segregation*: this segregation takes place when minorities fail to share common experiences and values with the majority.

Segregated circumstances and social stratification mechanisms shape ethnic minority children's unique experiences of proximal ecologies occurring outside the family, which is different from the experiences of the majority (i.e. White). Although ethnic majority and minority children are exposed to similar proximal settings, including *communities, schools, and the health care system*, ethnic minority children often encounter different functions and structures because of their experiences of segregated circumstances and social stratification mechanisms. This integrative model asserts that these proximal settings (i.e., communities, schools, and the health care system) can promote or inhibit ethnic minority children's development. The extent to which proximal environments promote or inhibit their development hinges on many factors, including resources and support provided by the environments, the culture-match between the family and the environment, and safety of the environments. Because these settings can promote or inhibit minority children's development, this integrative model called this body of settings (i.e., communities, schools, and the health care system) *promoting/inhibiting environments* (see Fig. 1).

Ethnic minority children's distal ecologies influence *adaptive culture* of their ethnic groups and their *family experiences* through the mediation of promoting/inhibiting environments (i.e., the proximal ecologies outside the family context). Ethnic minorities develop adaptive cultures in response to their experiences of segregated circumstances and social stratification mechanisms, as well as promoting/inhibiting environments. Adaptive culture is characterized by traditions, economic and political history, migration and acculturation. For example, African Americans develop one unique tradition by forming strong networks with extended family members and community members, which helps African American parents overcome economic hardship and balance both needs of childcare and breadwinning. In terms of *family experiences*, ethnic minorities may develop their own definitions of *family values*, *roles*, and *structures* in response to their experiences of distal ecologies, inhibiting/promoting ecologies, and adaptive culture. In addition, ethnic minority children's family experiences are shaped by their own characteristics (e.g., age, temperament, and gender). Due to formation of adaptive cultures and unique family experiences, ethnic minority children are likely to experience different developmental processes from the majority.

García Coll et al.'s (1996) integrative model fills several research gaps not addressed by previous scholarly models or theories. First, different from other development theories that are based on cultural perspectives (e.g., genetically deficient model and culturally deficient model), this integrative model does not view ethnic minorities' maladaptation as indicative of cultural deficiency, but instead views it as an adaptive solution in response to their social position and contexts (see discussion of García Coll et al., 1996). Second, although previous ecology-based models (e.g., transactional model of Sameroff & Chandler, 1975 and ecological theories of Bronfenbrenner, 1977, 1979) provide general pictures of the interaction between children,

contexts, and development processes, these models fail to consider ethnic minority children's unique socio-environmental experiences (e.g., segregated circumstances), as well as the impact of these experiences on their development. García Coll et al.'s (1996) integrative model fills this gap. Third, although previous ecology-based models (e.g., ecological theories of Bronfenbrenner) consider the impact of culture on child development, these models posit that cultural impacts occur at the macro level, rather than at the micro level (e.g., in family or school context). On the contrary, García Coll et al. (1996) argue that cultural impacts permeate all levels of social settings, from the macro- to the micro-level. This perspective provides a more holistic picture of the interaction between culture, context, and person for ethnic minority children because ethnic minorities tend to develop their own adaptive cultures that play an important role in shaping their family experiences and development.

2.2 A Process Model of the Determinants of Parenting

Belsky (1984) proposed a process model portraying what socio-environmental factors contribute to parenting (see Figure 2). This model is also grounded in ecological perspectives, underscoring that parenting practices are determined by parents' socio-environmental experiences (including *marital relations*, *work circumstances*, and *social network*) as well as *child characteristics*. Additionally, this model asserts that parents' *developmental history* influences their parenting through the mediation of *personality*. In turn, parents' personality shapes parenting through the mediation of their marital relations and work. Borrowing the perspective of the transactional model for child development, Belsky posits that the parent and the child influence each other's behaviors. Specifically, this model underscores that children's developmental processes are not only the direct product of parenting, but are also shaped by

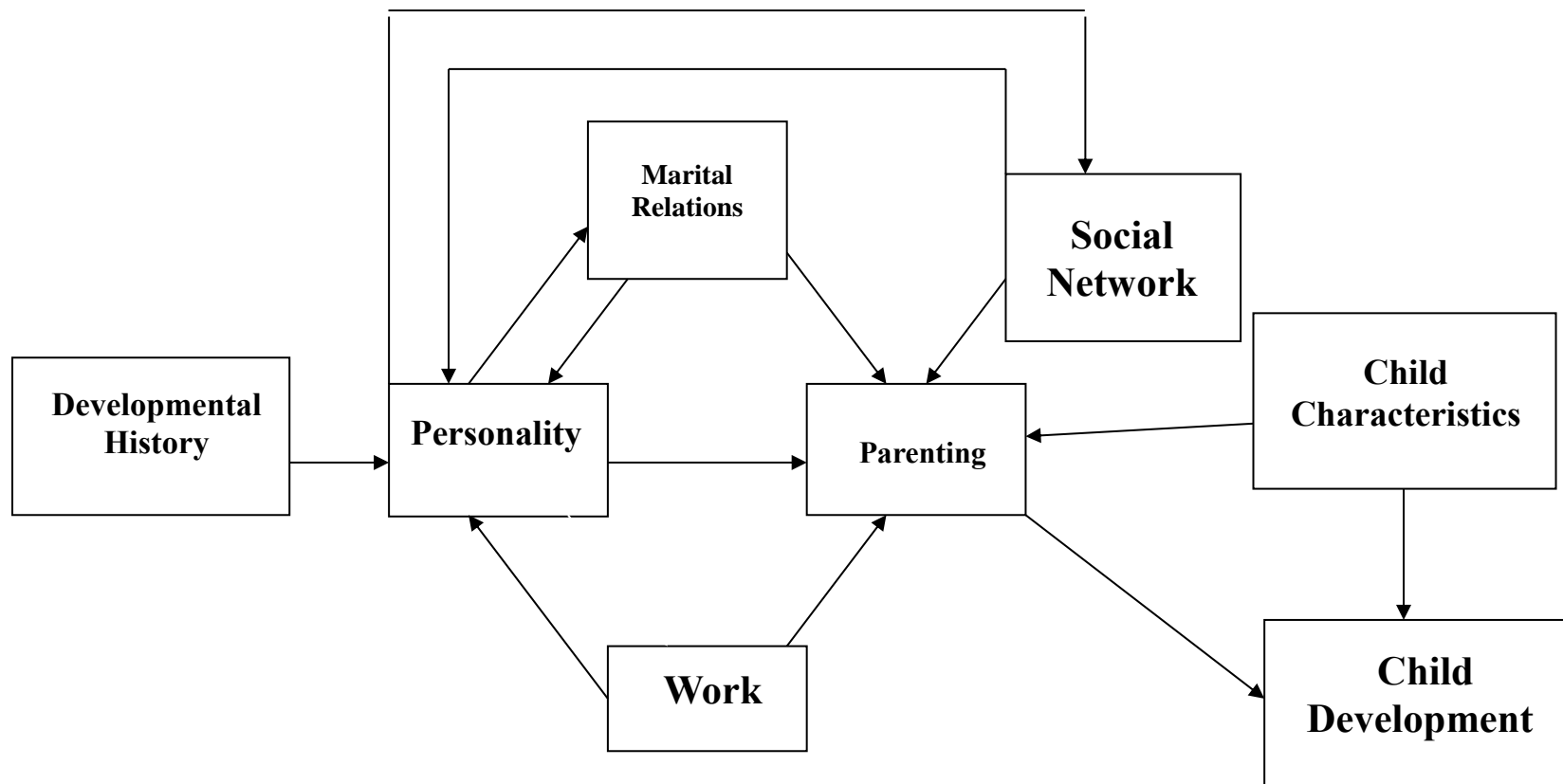


Figure 2. Belsky's Model of Influences on Parenting Behaviors

children's own *characteristics* (e.g., temperament) both directly and indirectly (i.e., through the mediation of parenting).

This model underscores that parents' socio-environmental experiences are primary sources of stress or support for parental functioning. In terms of support, parents' socio-environmental experiences (i.e., marital relations, work, and social networks) provide support for parenting through three forms: 1) emotional support, which is exhibited through "love and interpersonal acceptance" (p. 87, Belsky, 1984); 2) instrumental assistance, which includes receiving advice on childcare or substantial assistance in child-rearing; and 3) social expectations, which refer to receiving information about appropriate parenting behaviors. Each type of support above can produce influence on parenting through direct as well as indirect pathways. Supports going through the direct pathway bring effects targeting at parental functioning, while those going through the indirect pathway bring effect via mediators. One example for the direct pathway is that when parents receive advice on childcare, they directly apply it to childrearing practices. Regarding to indirect pathway, for example, when a mother feels she is loved by her husband, her self-esteem tends to increase and this increase in turn benefits efficacy in parenting. In this example, the husband's love can be thought as emotional support producing indirect effect via the mediation of the wife's psychological adjustment.

This model does not specify the forms of sources of stress, but highlights potential sources of stress tied with parents' socio-environmental experiences, including marital relationship, social network, and work circumstance. From the view of this model, all the above-mentioned experiences can bring both support and stress depending on their forms and environment-person fit. For example, social network is usually beneficial to positive parenting functioning. However, when the support received from social network does not match the

support desired, the support received will bring stress to parenting functioning. Likewise, marital relationship can provide parents with support in the forms of both emotional support (e.g., love and affection) and instrumental assistance (e.g., substantial assistance in child-rearing). However, it can also produce stress for parenting functioning when inter-spousal hostility is high. Work circumstances can also bring support as well as stress to parenting functioning. For example, working mothers who feel satisfied with their work tend to have high self-esteem and this positive psychological adjustment in turn benefits their parenting efficacy. In contrast, a number of potential stressors are related to work circumstances, including jobs demanding overtime work and inflexible schedules or jobs limiting opportunities for self-initiation. In addition, maternal employment often adds parenting stress when the family members do not encourage the mother to play the dual roles in employment and child-rearing.

By integrating these two theoretical foundations, the present study aims to understand how formation of parents' monitoring knowledge is shaped by parents' promoting/inhibiting environments (i.e., neighborhood condition), adaptive culture (i.e., grandmothers' childrearing involvement), family experiences (i.e., parenting and family relation), and adolescents' characteristics (i.e., gender). In this study, although links between adolescents' distal ecologies and proximal ecologies are not directly examined, the impact of distal ecologies is reflected in the nature of the present sample. That is, African and Latino Americans tend to experience economic segregation and thus they are disproportionately represented in the current sample of low-income families. In examination of family experiences, this study will apply Belsky's process model to uncover the interconnections of mothers' monitoring knowledge with their socio-environmental experiences (i.e., work circumstances) and their children's characteristics. Grandmothers' childrearing involvement are mentioned in both Garcia Coll et al.'s integrative

model and Belsky's process model but are classified into different categories, with Garcia Coll et al.'s model placing this childrearing support into adaptive culture, while Belsky's model classified this support into a kind of instrumental assistance nested within socio-environment experiences. Given that grandmothers' childrearing involvement has been portrayed as reflecting the importance of family cohesion—one of core cultural values—in African American and Latino families (Yasui & Division, 2007), the present study adopted the classification of Garcia Coll et al. for this childrearing support. The concept map for this study is presented in Figure 3.

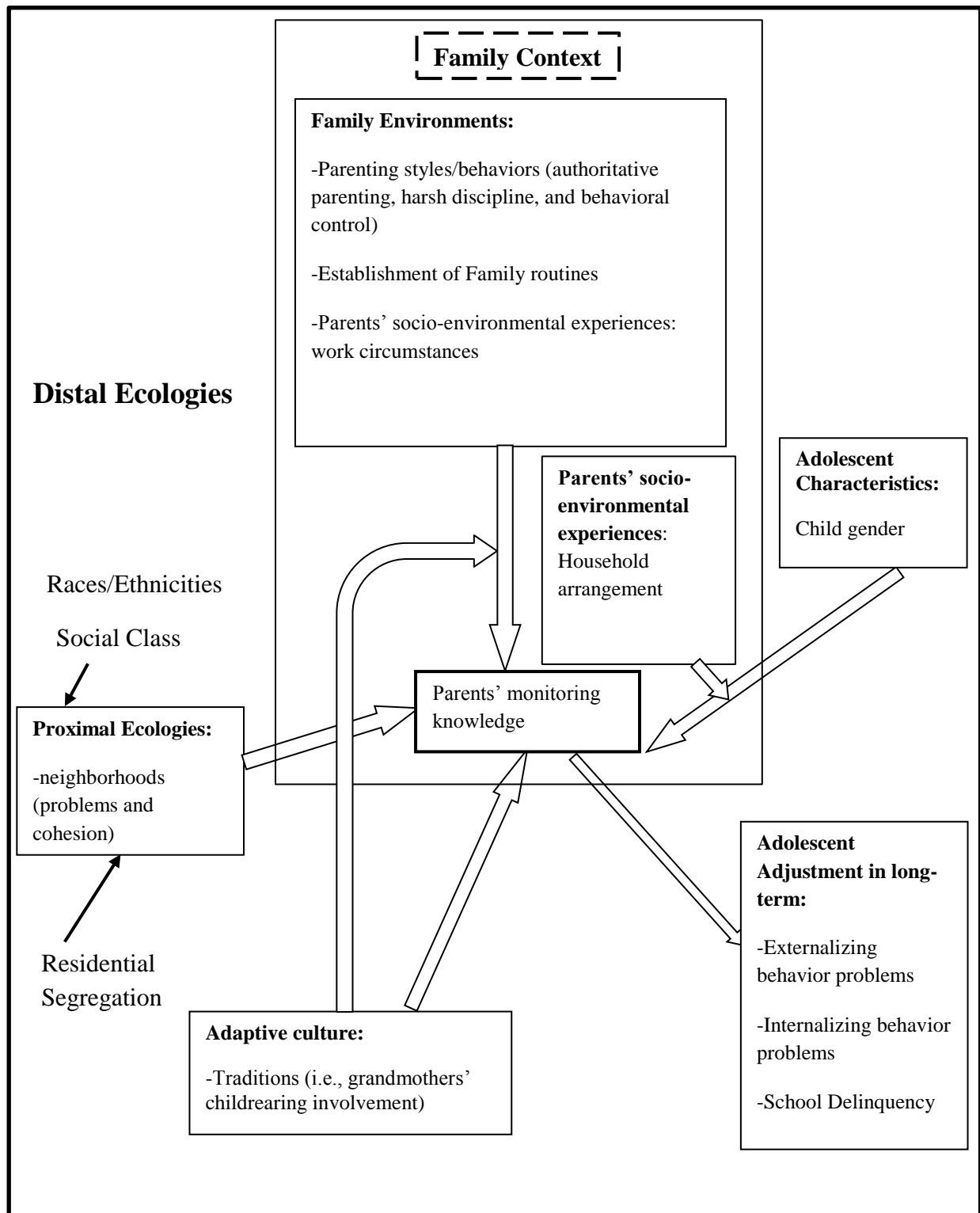


Figure 3. Concept Map for the Present Study

Chapter 3: Background Literature

According to the process model of parental monitoring (Hayes, Hudson, & Matthews, 2003), parents' monitoring knowledge of children's daily whereabouts and activities is the product of the monitoring process occurring at the third phase. At the first phase, parents set up rules and expectations on their children's behavior. Following the previous phase, children engage in free-time behavior at the second phase. At the third phase, parents gain information about locations, members, and types of activities of their children's free-time behavior. Parents' knowledge is primarily established either through parents' active solicitation or children's voluntary disclosure (Racz & McMahon, 2011). High levels of monitoring knowledge reflect that parents are able to effectively supervise their children's daily life as well as children are willing to discuss and share critical details of their daily behavior.

The traditional perspective on trajectories of parents' monitoring knowledge asserts that, on average, parents' knowledge about children and their activities decreases over time, especially when the children approach middle and late adolescence (Laird, Pettit, Bates, & Dodge, 2003). This decline in monitoring knowledge is considered as a result of parents' gradual release in controlling and children's desire for more freedom and privacy as they grow older. In contrast, some recent studies (Larid, Criss, Pettit, Dodge, & Bates, 2008; Spano et al., 2012) found that there are variations in patterns of trajectories of parents' monitoring knowledge, with some families experiencing consistently high levels, while some experience a moderate or sharp decline. Their findings suggest that families are diverse in the degrees to which whether adolescents are allowed to be autonomous managing and determining how and where they spend their free time.

Extending their work, the present study first identified trajectory groups of parents' knowledge and then explored underlying factors that predict variations in the patterns for African American and Latino adolescents in low-income families. Previous research in this area points that levels of parents' monitoring knowledge are associated to various factors, including family environment, neighborhood context, and child characteristics. In this following section, previous findings on each of these factors are reviewed along with discussion on similarities and/or differences between African Americans and Latinos, which guides research hypotheses in the present study. Before proceeding to review of previous findings on parents' monitoring knowledge and discussion on ethnic differences, the African American and Latino family contexts are reviewed for purposes of facilitating further discussion on similarities and/or differences between African Americans and Latinos.

3.1 African American Families

3.1.1 Cultural Values

The family context of African Americans is primarily influenced by two cultural values: *communalism* and *spirituality*. Communalism is defined as “a belief in the importance of group over the individual and cooperation rather than competition” (Belgrave, Townsend, Cherry, & Cunningham, 1997, p.423). The cultural value can be traced to the African worldview that emphasizes every creature in the universe is functionally dependent on each other. The emphasis on communalism is reflected in the strong communal ties of African Americans. African Americans tend to form close communal ties with family members, friends, and community members. Among the early generations of African Americans, they felt that maintaining the tradition of strong communal ties plays an important role in helping them cope with the slavery and oppressive experience. Nowadays, having strong communal ties is still an important strength

that help African Americans cope with adversities (e.g., economic stress). For example, low-income African Americans often rely on family members, friends, and community members for assistance in finance, elder-taking, and childrearing (Yasui & Dishion, 2007).

Another key cultural value, spirituality, is defined as a belief in “the emphasis on interconnectedness with the natural and the human environments” (Yasui & Division, 2007, p. 152). This cultural value is a trace of the African worldview that stresses interconnections among all organisms and the importance of harmony (Utsey et al., 2000). The emphasis on spirituality is reflected in group cooperation and harmony and strong ties with both blood related and fictive kin. Numerous studies have shown that spirituality plays an important foundation for African American families and promote intergenerational interdependence and family cohesion, which benefits their children’s development (e.g., Belgrave et al., 1994; Brody, Stoneman, & Flor, 1996).

3.1.2 Family Environment

Communalism and spirituality bear profound influence on childrearing arrangement for African Americans. In terms of childrearing arrangement, African Americans tend to feel obligated to provide childrearing support for blood-related kin or fictive kin such as friends and community members (McAdoo, 1981). Among sources of kinship support, support from grandparents is primary since intergenerational connections are highly valued in African American families (Yasui & Dishion, 2007). Kinship support for childrearing is thought as an important adaptation to the African American family context. Compared to their European American counterparts, African American children are more likely to grow up in single mother headed households. The majority of these single mothers are of working-class, working for low-paid and labor-intense jobs. The nature of their work condition blocks available time to engage in

childrearing tasks. For these mothers, receiving kinship support for childrearing helps share childrearing responsibilities so that they are able to maintain family function and meanwhile fulfill economic needs (McAdoo, 2002). Research on African American families has shown that kinship support is associated to positive family management, including high parental involvement in schooling and family organization (i.e., clear family routines and schedules) for both two-parent and single-parent households (Taylor, 1996).

Communalism and spirituality are also reflected in parenting beliefs and behaviors of African Americans. Since both communalism and spirituality emphasize group interconnection and harmony with a group, African American parents feel the importance of maintaining family harmony, parent-child interconnection, and parental authority (Yasui & Dishion, 2007). These parenting beliefs are distinctive from what European Americans bear in which the priority is to foster children's autonomy and independence (Rothbaum & Trommsdorff, 2007). Guided by parenting beliefs, African and European American parents also engage in distinctive parenting behaviors. Before proceeding to discussion on comparison in parenting behaviors between African and European Americans, I reviewed previous research on parenting behaviors below.

One of the most influential dimensions of parenting was proposed by Baumrind (1971). Baumrind identified two primary dimensions of parenting behavior: parental responsiveness and parental demandingness. Parental responsiveness refers to warmth, nurturance, and responses to children's needs. Parental responsiveness has been portrayed as one crucial parenting behavior designed to foster children's autonomy and self-determination (Rothbaum & Trommsdorff, 2007). Parental demandingness is a more complex concept that reflects at least two distinctive facets of control-oriented parenting behavior. Based on the work of Baumrind, the first facet is behavioral control, which refers to parents' attempts to set up clear rules and consistent

discipline in order to shape age-appropriate behaviors of children. In the original work of Baumrind, responsiveness and behavioral control yield four parenting styles: authoritative (high in both parental responsiveness and behavioral control), authoritarian (low in parental responsiveness and high in behavioral control), permissive (high in parental responsiveness and low in behavioral control), and indifferent (low in both parental responsiveness and behavioral control).

The second facet of demandingness is hostility-coercion, which was not reflected in the original work of Baumrind. Hostility-coercion is defined as a variety of parenting tactics that aim to inhibit children's autonomy and self-regulation, including threats, power assertion, psychological control, and nagging or harsh physical discipline (Barber, 2002; Bugental, 1992; Hoffman, 1970; Weis & Toolis, 2010). The crucial difference between the two facets rests on that behavioral control aims to foster children's behavioral regulation in order to meet the constraints of society, while hostility-coercion behaviors are directed to assert parents' authority and power over children (Weis & Toolis, 2010). The following discussion focuses on one specific tactic of hostility-coercion—harsh discipline (including nagging and physical punishment), which is one of the focus constructs in the present study.

A body of research has shown that compared to European American parents, African American parents tend to show less responsiveness/acceptance, but exercise more control-oriented parenting in terms of both facets, i.e., behavioral control and harsh discipline (e.g., Berlin et al., 2009; Bradley, Corwyn, McAdoo, & García Coll, 2001; Jambunathan, Burts, & Pierce, 2000; Weis & Toolis, 2010; Dearing, 2004). Literature based on Baumrind's model has also shown ethnic difference. Specifically, African Americans tend to score lower than European Americans in authoritative parenting and higher in authoritarian parenting (Dornbusch, Ritter,

Leiderman, Roberts, & Fraleigh, 1987; Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999).

The above findings can be explained by the ethnic differences in cultural values, with European American parents placing more emphasis on fostering children's autonomy, whereas African American parents place more emphasis on parental authority and family relatedness.

However, simply making clear-cut differentiations in parenting behavior between African and European Americans may conceal the variations within these ethnicities. Indeed, there has been growing attention to diversity of parenting behavior in relation to social contexts, such as socioeconomic status (SES), within the ethnicities. For example, some studies have noted that differences between African and European Americans in levels of parental responsiveness, behavioral control, and harsh discipline are attenuated as SES increases (Bradley et al., 2001; Weis & Toolis, 2010). Within African Americans, higher SES parents are more likely to exhibit higher responsiveness as well as lower control and physical discipline than lower SES counterparts (Dodson, 1997; Kelley, Power, & Wimbush, 1992; McLoyd, 1990b; Smetana, 2000). In line with the above findings, one studying examining typology of African American family functioning found that the proportions of authoritative and authoritarian type were comparable as well as the parents of the authoritative type scored higher on the years of parental education and income than those of authoritarian type (Mandara & Murray, 2002). In addition to SES, parenting behavior also varies with child gender, with boys perceiving more parental control than girls (Jones-Sanpei, Day, & Holmes, 2009). This may be due to that African American parents are aware of boys' higher risk at behavioral problems.

Literature about associations of parenting with parent-child closeness and parental warmth for African Americans has shown a trend distinctive from that about European Americans. For European Americans, parent-child closeness and parental warmth are

consistently predicted by authoritative parenting or the parenting tactic aiming to foster children's self-regulation, such as behavioral control; but are negatively linked to harsh discipline or coercive control (Chao, 2001; Jackson-Newsom et al., 2008; Westbrook & Harden, 2010). In contrast, for African Americans, parental warmth can be predicted by all the above parenting styles or tactics, including authoritative parenting, behavioral control, harsh discipline, and coercive control for both young children and adolescents (Jackson-Newsom et al., 2008; Mandara & Murray, 2002; Steele, Nesbitt-Daly, Daniel, & Forehand, 2005; Westbrook & Harden, 2010). It is noteworthy that the above findings were held after family arrangement and SES were controlled for, and thus cannot be accounted for by interactions of ethnicity and SES/family arrangement. Although there also exist some conflicting findings specifically for harsh discipline and coercive control (i.e., no significant or negative relations between the two hostility-coercion tactics and parental warmth) (Jackson-Newsom et al., 2008; Mandara & Murray, 2002), the overall findings suggest that harsh discipline and coercive control may convey different meanings for European and African Americans. Since parental authority and power is more highly esteemed in African American families than in their European American counterparts, African American children may be more likely to interpret harsh discipline and coercive control as appropriate parenting tactics, and thus tend to perceive such parenting tactics as representative of parental care and warmth.

Literature about associations between parenting and child adjustment for African Americans has also shown a trend distinctive from that about European Americans. Similarities still exist for both ethnicities in that child developmental outcomes are benefitted by parental responsiveness/warmth (Bradley, Corwyn, Burchinal, McAdoo, & García Coll, 2001; Dearing, 2004) and behavioral control (Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Wang,

Pomerantz, & Chen, 2007; Mason et al., 1996). However, a major difference rests on that for African Americans, harsh discipline or coercive control produces less negative effects on developmental outcomes or even protective effects, when compared to European Americans. A body of research has shown that positive associations between harsh discipline/coercive control and poor outcomes (e.g., internalizing and externalizing behavior problems and low academic achievement) were weaker or not significant for African American children compared to their European American peers (Bradley, Corwyn, McAdoo et al., 2001; Hill & Bush, 2001; Stormshak et al., 2000). One longitudinal study even found that harsh discipline in early childhood and during early adolescence predicted more externalizing behavior problems reported at age 16 for European American adolescents, but fewer behavior problems for their African American peers (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). Their findings were held consistent for girls and boys and after family arrangements, SES, and child temperament were controlled. Together, the above findings suggest that harsh discipline may produce less negative or even positive implications for African American children's developmental outcomes than the outcomes of European Americans. The previous discussion in the present study has pointed that African American children tend to interpret harsh discipline as an appropriate parenting tactic and a vehicle that conveys parental care and warmth. Accordingly, African American children are more likely to be benefitted by such tactic than their European American counterparts.

Although the above findings suggest ethnic difference in implications of harsh discipline, there still exist conflicting findings. For example, some studies indicate that the negative effects of harsh discipline or coercive control on developmental outcomes (e.g., externalizing and internalizing behavior and academic achievement) are similar for European and African

Americans (McLeod & Shanahan, 1993; Shumow, Vandell, & Posner, 1998; Whiteside-Mansell, Bradley, Owen, Randolph, & Cauce, 2003). The mixed findings may be explained by developmental processing. Among the above-mentioned findings suggesting ethnic similarity, children were assessed during preschool or elementary school years, while Lansford et al.'s (2004) study assessed the effect of harsh discipline in middle to late adolescence. Although it still calls for further empirical research to document the diversity of implications of harsh discipline in relation to child age, the above findings suggest that older African American children are more likely to interpret harsh discipline as an appropriate parenting tactic than young children given that they have more refined cognitive processing (see the discussion of Lansford et al., 2004).

3.2. Latino American Families

3.2.1 Cultural Values

Latinos are one of the fastest growing minorities in the US, which is projected to rise to one-fourth by 2050 (García Coll & Pachter, 2002). Latinos in general refers to people with origins in Mexico, Central or South America, and the Spanish-speaking Caribbean (Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002). Although national origins of Latinos are diverse, Latinos share many cultural heritages. The two primary common cultural heritages are *familismo* and *respeto*, which bear profound influence on the Latino American family context (Harwood et al., 2002). Familismo refers to “a sense of obligation to and connectedness with one’s immediate and extended family” (Unger et al., 2002, p.259). According to Ferrari (2002, p. 794), familismo is described as “family unity, with a sense of obligation among family members, reverence for the elderly, and responsibility to care for all members, especially children.” Overall, familismo means a strong sense of family cohesion within nuclear family system and among

extended family members (e.g., grandparents, aunts, uncles, cousins, and godparents) and it is maintained through mutual support and placing the importance of family needs over individual needs. Another central cultural heritage is *respeto*, referring to “knowing the level of courtesy and decorum required in a given situation in relation to other people of a particular age, sex, and social status” (Harwood, Miller, & Lucca Irizarry, 1995, p.98). As *respeto* is manifested in family context, it stresses the importance of showing respect and obedience towards parents and elders (Marin & Vanoss Marin, 1991).

3.2.2 Family Environment

Familismo is reflected in family structure and childrearing arrangement in Latino families. Compared to European Americans, Latinos are more likely to have strong networks with extended family members; and multigenerational households are more common among Latinos (e.g., García Coll, 1993; Miller & Harwood, 2001). Such strong family ties provide Latinos with great resources of financial support and assistance in childrearing, which has been found as an important protector for the families experiencing times of crisis, such as financial strain and single-parent households (Garcia-Preto, 1996; Zea, Mason, & Murguia, 2000). Also, family support has been found as a predictor of good quality of parenting (e.g., parental acceptance) or a buffer that decreases negative effects of financial and global life stress on mothers’ nurturance (i.e., provision of warmth and love in childrearing) (De Leon Siantz & Smith, 1994; Uno, Florsheim, & Uchino, 1998).

Familismo coupled with *respeto* bears great influence on parenting beliefs and behaviors in Latino families. Latino parents tend to place great emphasis on maintaining parental authority, parent-child interconnection, and family harmony (Harwood et al., 2002). Along with the previous discussion in the present study for African Americans, parenting beliefs of Latinos are

more distinctive from the beliefs of European Americans that stress fostering children's autonomy and independence, but are more similar with the beliefs of African Americans that stress parental authority and harmony. A body of research has found that the degrees to which Latino parents exercised in both facets of control-oriented parenting (i.e., behavioral control and harsh discipline) are similar to the degrees of African American parents, and are higher than the degrees of their European American counterparts (e.g., Blair, Blair, & Madamba, 1999; Bradley, Corwyn, McAdoo et al., 2001; Dixon et al., 2008; Finkelstein, Donenberg, & Martinovich, 2001; Hill et al., 2003; Varela et al., 2004; Okagaki & Frensch, 1998). Within Latinos, levels of control-oriented parenting vary with child gender, with girls perceiving more parental control than boys (Jones-Sanpei et al., 2009; Perez-Brena, Updegraff, & Umaña-Taylor, 2012). This might be due to that immigrant parents place different standards in gender role in preserving cultural heritages. Based on the review of Suarez-Orozco and Qin (2006), immigrant parents across ethnic backgrounds view daughters as a more important keeper of the culture than boys. In order to impede daughters from assimilating in the American mainstream culture too quickly, immigrant parents tend to use strict control over daughters' daily activities, such as going to parties or hanging out with friends after school.

Although a number of studies have indicated the ethnic similarity in levels of control-oriented parenting for Latinos and African Americans, there also exist conflicting findings. Specifically, some studies found that the degrees to which African American parents engage in harsh discipline are higher than the degrees of Latino parents (Jambunathan, Burts, & Pierce, 2000; Weis & Toolis, 2010), while some studies indicated that the degrees are lower for African Americans in terms of harsh discipline or behavioral control (Dearing, 2004; Florsheim, Tolan, & Gorman-Smith, 1996). Although it still waits for more empirical research to clarify the above

inconsistent findings, such mixed findings may be explained by children's age. With the exception of the studies of Jambunathan et al. (2000) and Weis and Toolis (2010), the other studies assessed the children aged beyond 7 or a wide range of age from 0 to 13. Thus, it is possible that Latino parents tend to increase degrees of control-oriented parenting as children age so that the differences in control parenting between Latinos and African Americans are reduced or even are toward an opposite trend.

The literature on the differences in control-oriented parenting among Latino, African Americans and European Americans has shown a similar trend, but the literature on the differences in parental responsiveness/warmth and authoritative parenting has been mixed. Some studies have indicated that Latino and European American parents display similar degrees of parental responsiveness/warmth or authoritative parenting and their degrees are higher than the degrees of African Americans (Berlin et al., 2009; Hill et al., 2003; Jambunathan et al., 2008; Varela et al., 2004), while some found that Latino and African American parents display similar degrees of parental responsiveness and their degrees are lower than the degrees of their European American counterparts (Bradley, Corwyn, McAdoo et al., 2001; Dearing, 2004; Weis & Toolis, 2010).

The above mixed findings may not be explained by any single demographic factors, such as SES, children's age, or parents' educational level, given that both findings suggesting similar and different levels were based on a wide range of SES, children's age, and parents' educational level. Accordingly, it remains unclear regarding the factors leading to similarities or differences in parental responsiveness and authoritative parenting among Latinos, African Americans, and European Americans. Even so, the above findings still point a possible trend in ethnic differences. That is, Latino parents are more likely to display high degrees of parental responsiveness or

authoritative parenting as what European American parents do, and their degrees tend to be higher than the degrees of their African American parents. This trend is consistent with the view that family cohesion is more highly esteemed in Latino families than in African American families (Pachter, Auinger, Palmer, & Weitzman, 2006). The above difference between Latinos and African Americans may not only be explained by Latinos' cultural traditions, but also due to adaptation related to migration. Compared to African Americans, most Latinos are recent migrants. After migrating to the US, Latino parents may rely on building close relations with their children and family cohesion to teach their children cultural traditions or reduce the extra-familial contact that may deteriorate parents' efficacy in monitoring (Bulcroft, Carmody, & Bulcroft, 1996; Reese, Kroesen, & Gallimore, 2000).

Literature about associations between parenting and parent-child relationship for Latino Americans has also shown a trend distinctive from that about European Americans but more similar to that about African Americans. The previous discussion in the present study points to that for European Americans, parental warmth is consistently predicted by authoritative parenting or behavior control, but is negatively linked to harsh discipline and coercive control. In contrast, like African Americans, parental warmth can be conveyed through all the above parenting styles or tactics, including authoritative parenting, behavioral control, harsh discipline, and coercive control for Latinos (Hill et al., 2003; Izzo et al., 2000; Domenech Rodríguez, Donovan, & Crowley, 2009). These findings suggest that Latino and African American children are alike in the way they perceive harsh discipline and coercive control. Like African American children, Latino children tend to interpret harsh discipline and coercive control as a positive connotation representing parental warmth since parental authority and power is also highly valued in their traditions. Indeed, Crockett and colleagues (2007) interviewed both first and

second generation Mexican American adolescents and found that these adolescents conceptualized harsh discipline as a form of parents' caring showing love and warm.

Literature about associations between parenting and child adjustment for Latinos has shown a trend similar to that about African Americans in that the positive effects of authoritative parenting, parental responsiveness, and behavioral control for child development are similar, but the protective role of harsh discipline is more salient, compared with European Americans. Indeed, harsh discipline in Latino families has been documented to be linked to low levels of conduct problems and higher cognitive functioning while the same parenting practice was linked to increased conduct problems and lower cognitive functioning for European Americans (Berlin et al., 2009; Dearing, 2004). Like African American children, Latino children also tend to interpret harsh discipline as an appropriate parenting tactic and representative of parental caring and warmth. Thus, such tactic is more likely to benefit developmental outcomes of Latino children than the outcomes of their European American counterparts.

However, like African American children, there also exist some conflicting findings in terms of implications of harsh discipline for Latino children's development outcomes. Specifically, a number of research has evidenced that harsh discipline is linked to more externalizing and internalizing behavior problems for both Latino and European American children (Bradley, Corwyn, Burchinal et al., 2001; Hill et al., 2003; McLeod, 1993). The mixed findings may not be simply explained by one single demographic or environmental factor (e.g., SES, child age, and neighborhood safety) given that the studies suggesting positive and negative implications of harsh discipline assessed both a wide range of SES and child age. It needs more empirical research to clarify the factors accounting for the mixed findings on implications of harsh discipline. Although there exist the mixed findings, the overall discussion on African

Americans and Latinos in the present study suggests that harsh discipline is more optimal to family relationship characteristics (e.g., warmth and closeness) and children's overall adjustment for both ethnicities, compared to European Americans.

In addition to ethnic difference, literature on Latino family environment is often centered on within-group variations in relation to acculturation. A body of previous findings have indicated that less and more acculturated Latino parents score similarly in authoritative parenting, parental responsiveness, and both facets of control-oriented parenting (Berlin et al., 2009; Hill et al., 2003; Varela et al., 2004). Berlin and colleagues also found that the positive association between harsh discipline and children's cognitive functioning is similar for both less and more acculturated parents. Other research has lent evidence on stability of values in relation to familismo and respeto during the process of acculturation. For example, Rueschenberg and Buriel (1989) examined a sample of Mexican American parents with three different generational statuses (monolingual Spanish-speaking and migrating within five years, monolingual Spanish-speaking or Spanish-dominant and residing at least ten years, and US-born and bilingual or English-speaking preference). Their findings indicated that the three groups are different in some values unrelated to the family system (e.g., independence and achievement orientation), but are alike in their values central to the family system, such as family cohesiveness and authority of parents.

Although the above findings suggest that Latino family environment appears to be stable during the process of acculturation, some findings lend conflicting evidence. For example, Hill and colleagues (2003) found that mothers' acceptance and coercive control were positively related for Mexican Americans speaking Spanish, but not for those speaking English. Their finding suggests that coercive control or harsh discipline may be more likely to be interpreted as

parental warmth for less acculturated Latinos than their more acculturated counterparts. In line with this view, Gonzales and colleagues (2000) found that coercive control was related to fewer conduct problems only in Spanish-speaking families. All the above-mentioned findings were based on small community-based samples (sample size ranging between 45 and 177), with the exception of the study of Berlin et al. based on a national sample. More future large national-scale research may clarify relations between family environment and acculturation among Latinos.

3.3 Factors Linked to Parents' Monitoring Knowledge

In this proceeding section, previous findings on factors associated to levels of parents' monitoring knowledge are reviewed. These factors include family environment, neighborhood context, child characteristics, and adaptive culture. Review of each of these factors is along with discussion on similarities and/or differences between African Americans and Latinos, which guides research hypotheses in the present study.

3.3.1 Family Environment

Regardless of sources of knowledge from parents' solicitation or child disclosure, high degrees of parents' monitoring knowledge have been linked to indicators of positive parent-child relationship (e.g., communication full of trust and openness, closeness, and parental warmth) in White-dominant and Mexican American families based on cross-sectional data (Blocklin, Crouter, Updegraff, & McHale, 2011; Padilla-Walker, Harper, & Bean, 2011). The previous discussion in the present study points that for European Americans, the above positive parent-child relationship qualities are likely to be fostered through authoritative parenting or behavioral control, but are not linked to harsh discipline. In contrast, these positive parent-child relationship qualities can be linked to both authoritative and both facets of control-oriented parenting (i.e.,

behavioral control and harsh discipline) for both African Americans and Latinos. Accordingly, adolescents of both ethnicities may be more likely to experience consistently high levels of mothers' monitoring knowledge when experiencing averagely high levels of both authoritative and control-oriented parenting of the mothers.

In assessing the low-income African American and Latino mothers' parenting styles and tactics, the present study did not apply Steinberg et al.'s approach (1992) in which parenting styles and/or tactics were classified into static categories (i.e., authoritative and authoritarian parenting). On the contrary, the study assumes parents may mix their parenting styles and tactics and thus assessed the relative degrees to which the parents exercise each type of parenting styles and/or tactics (i.e., authoritative parenting, behavior control, and harsh discipline). The reason behind is that scholars have noted that parenting practices are not static, but rather fluid and changing according to situation (Tamis-LeMonda et al, 2008).

In addition to parenting styles and tactics, the present study focused on one indicator of family relationship quality, i.e., family routine. Family routine is defined as a set of family regular activities arranged by parents in order to create common family time for family members; some examples of family routine include the times for playing and talking, mealtimes, and homework times (Jensen, James, Boyce, & Hartnett, 1983). Based on this definition, high levels of family routine may provide the mothers with a lot of opportunities to solicit whereabouts and activities from their children through the regular family time. Meanwhile, their children are also able to use the family time to share and discuss their free-time activities in or after school. In other words, high levels of family routine may shape positive dynamics of mother-child communication in which both the mother and the child can discuss the child's daily life.

In addition to the above explanation based on increased opportunities of mother-child communication, cultural tradition in African Americans and Latinos may also suggest the positive link between family routine and mothers' monitoring knowledge for the two ethnicities. Since family routine is directed to enhance opportunities for family members to engage in common activities, this family dynamic probably serves as a venue through which family cohesion is enhanced. As previously discussed in this article, both African Americans and Latinos place great emphasis on the importance of establishing family cohesion. Given that family cohesion is a core of their cultural traditions, African American and Latino adolescents probably enjoy the common family time and take this advantage to share and discuss their daily life with their mothers. Also, these adolescents may perceive the positive connotation behind family routine, such as mothers' care and love, which leads to their intention to voluntarily disclose their whereabouts and activities. To my knowledge, relation between family routine and parents' monitoring knowledge has been underexplored across ethnicities, with exception of the study of Prelow et al. (2007) finding short-term positive link. The present study aims to address whether average high levels of family routine over time facilitate mothers' long-term monitoring knowledge for the low-income African American and Latino families.

Belsky's process model posits that parenting behavior is predicted by parents' work circumstances. In line with this view, levels of parents' monitoring knowledge have been found to be associated with one key family factor, i.e., parents' work hours. Further, findings on links between parents' monitoring knowledge and work hours suggest that the impact of work hours may depend on family structure and assistance from family networks. Conducting a cross-sectional study with in-depth interview of White-dominant samples, Belle and Philips (2010) found that both mothers and fathers complain that long work hours hinder them from gaining

monitoring knowledge of their children. Moreover, this study found that the difficulty of gaining monitoring knowledge is more common among parents who do not have relatives to rely on for child-caring. This might be due to that these parents are unable to rely on their relatives to help monitor their children and gain information about their children. Extending their work, the present study examined whether there is a link between averagely long work hours of mothers in adolescence and a decline in their monitoring knowledge over time among low-income African and Latino American households. Moreover, this study investigated whether this link is buffered by the support of relatives, specifically grandmothers' childrearing involvement. The present study focuses on parenting support from grandmothers because their support has been described as one primary family support for both African Americans and Latinos (Cox, Brooks, & Valcarcel, 2000; Sotomayor & Applewhite, 1988; Taylor, 1996).

3.3.2 Neighborhood Context

García Coll et al.'s integrative model points that communities can either promote or inhibit children's development through the mediation of their family experiences. When communities are characterized as unsafe and lacking of social cohesion (i.e., trust and mutual support among neighbors), children's positive externalizing and internalizing behavior adjustment is more likely to be inhibited because parents may not effectively monitor their children or gain information about them. This suggests that parents' monitoring knowledge is dependent on the neighborhood context. However, very few studies examine the role of neighborhoods for parents' knowledge. One effort was made by Spano and colleagues (2012). By examining African American youth living in poverty, they found that growing exposure to violence in neighborhoods increases the likelihood of a decrease in parents' monitoring knowledge over time.

Social cohesion (characterized as trust and mutual support among neighbors) of neighborhoods is another critical factor that may influence degrees of parents' monitoring knowledge. When living in cohesive communities, parents tend to exert strict control over children's activities because misbehavior is not allowed in such communities (Roche, Ensminger, & Cherlin, 2007). Moreover, cohesive communities are characterized by the mutual supervision of children's behaviors and safety. Accordingly, socially organized communities may increase degrees of parents' knowledge either through parents' own efforts or neighbors' assistance. In line with this perspective, Lahey et al. (2008) examined a broad (from low to high SES) sample of Latinos, European Americans, and African Americans, with the finding that adolescents living in disorganized neighborhoods reported low degrees of parental knowledge. This study only found this link in a short term. Extending their work, the proposed study examined long-term associations between neighborhood cohesion and mothers' monitoring knowledge for low-income African Americans and Latinos.

The present study surmises the two ethnic groups may be different in the extent to which consistently disadvantaged neighborhood contexts (i.e., high degrees of neighborhood problems and low degrees of neighborhood cohesion) are linked to low levels of mothers' monitoring knowledge over time. The previous discussion in this article points that both African Americans and Latinos place emphasis on the importance of family cohesion. However, empirical research, albeit very limited, has noted that family cohesion may play a more important role in strengthening family solidarity and interdependence and thus blocking potential harm from neighborhoods that may threaten positive family processes for Latinos than for African Americans (Pachter, Auinger, Palmer, & Weitzman, 2006). Using data of female respondents with children in middle childhood from the National Longitudinal Survey of Youth 79, Pachter

et al. (2006) found that disadvantaged neighborhood conditions (i.e., with lack of safety and social cohesion) are detrimental to positive family processes (e.g., maternal supportive parenting) for European and African Americans, but such an effect was not found for Latino Americans. The authors concluded that the strength of family cohesion acts as a stronger firewall that blocks negative impacts from neighborhoods for Latinos compared to African Americans. Thus, neighborhood conditions may have little to do with family dynamics (e.g., parenting, parent-child communication, and family relations) for Latino Americans compared to African Americans. Accordingly, it is surmised that consistently disadvantaged neighborhood conditions in adolescence are more likely to be linked to low levels of mothers' monitoring knowledge over time for African Americans than for Latinos.

3.3.3 Children's Characteristics

Both García Coll et al.'s integrative model and Belsky's process model point that parenting and parents' family role is impacted by children's characteristics. In line with both perspectives, children's own characteristics account for the extent to which their parents gain knowledge about their child's whereabouts and activities. Child gender is one key children's characteristic factor that accounts for parents' monitoring knowledge. Regardless of sources of knowledge from parents' solicitation or child disclosure, parents tend to gain more knowledge about their daughters' activities and whereabouts than those of their sons across various countries, such as Hong Kong Chinese (Shek, 2005), European-Americans in the U.S. (Peterson, Bush, Wilson, & Hennon, 2005; Smetana & Daddis, 2002), and adolescents in Canada, France, and Italy (Claes, Lacourse, Bouchard, & Perucchini, 2003) and Sweden (Stattin & Kerr, 2000). This gender difference can be explained by a number of factors, including girls' high levels of intention to share information with parents (Stattin & Kerr, 2000), parents' overprotection of

daughters and fear of a daughters' pregnancy (Veal & Ross, 2006). In addition, parents are better able to monitor a same-sex child than an opposite-sex child either through active or passive approaches because parents tend to have more conversations with same-sex children and encounter fewer barriers in understanding same-sex children's activities (Vieno, Nation, Pastore, & Santinello, 2009). Overall, parents are faced with more barriers to gain monitoring knowledge about boys. Yet, fathers appear to encounter fewer barriers than mothers in gaining knowledge because of the same-sex parent-child dyad interactions.

The above-mentioned studies offered evidence that the extent to which parents gain monitoring knowledge varies according to children's and their own gender. However, their evidence is based on the samples dominated by two-parent families. It remains unknown whether single-mother families also encounter more barriers to gain monitoring knowledge about boys. The living arrangements of single-mother-headed households are diverse, including lone single mothers and a single mother living with grandparent(s), other kin, a male partner, or grown siblings (Davidson, 2007). Plausibly, levels of single mothers' monitoring knowledge about boys may vary according to their living arrangements. Compared to the single mothers living with a male partner or other male adult figures in the household, lone single mothers may encounter more barriers to gain knowledge about boys because of having no male helpers who are able to help gain information about boys and of the opposite-sex parent-child dyad interaction.

It is also possible that lone single mothers encounter no barriers in gaining knowledge about their sons because they realize they have no male helpers and thus makes great efforts to have periodical conversations with the sons. To uncover the aforementioned complexities of levels of mothers' monitoring knowledge about boys according to family arrangements, the present study will examine whether links between child gender and trajectory groups of mothers'

monitoring knowledge vary according to household arrangements, specifically among the two-parent family (the mother living with the focus child's biological father), the lone single mother, and the single mothers living with a male partner or other male adult figures.

3.3.4 Adaptive Culture

García Coll et al.'s integrative model points that ethnic minorities may develop their adaptive cultures such as traditions to cope with segregated circumstances (e.g., economic segregation). In turn, these adaptive cultures influence ethnic minority children's family experiences. One salient tradition in African Americans and Latinos is forming strong networks with extended family members. For both ethnicities, strong ties with extended family members provide great assistance in childrearing, which has been found as an important protector for the families experiencing times of crisis, such as poverty or single-parent households. Previous research has not yet offered evidence on links between patterns of trajectories of parents' monitoring knowledge and receiving supports in childrearing from relatives. Yet, support from family members is a possible predictor of consistently high or increasing levels of parents' monitoring knowledge for African American and Latino families, since the previous discussion in this article points that kinship support is associated to positive family processes (e.g., high parental involvement in schooling and clear family routines). Specifically, the present study focuses on grandmothers' childrearing involvement because support from grandmothers has been described as one important part of heritage for both African Americans and Latinos (Cox et al., 2000; Sotomayor & Applewhite, 1988; Taylor, 1996). It is surmised that averagely high levels of grandmothers' childrearing involvement are linked to consistently high or increasing levels of mothers' monitoring knowledge over time for both ethnicities.

3.4 Parents' Monitoring Knowledge and Child Outcomes

Both García Coll et al.'s integrative model and Belsky's process model point that parenting or parents' family role is an important predictor of children's adjustment outcomes. In line with the above-mentioned theoretical view, current scholarly research has noted the preventive role of parents' monitoring knowledge for children's maladjustment. Children with parents that possess high degrees of knowledge about their children's whereabouts and activities are less likely to develop externalizing behavior problems or school delinquency (e.g., Engels et al., 2006; Laird et al., 2003). Yet, findings based on longitudinal studies lend caution about interpreting causal relations between parents' knowledge and children's adjustment. Examining cross-lagged relations, a number of studies (e.g., Bumpus & Hill, 2008; Neumann et al., 2010) found bidirectional associations between parents' monitoring knowledge and children's externalizing behavior problems or school delinquency. That is, earlier high degrees of parents' knowledge decrease the likelihood of later externalizing behavior problems and school delinquency in children, and earlier high degrees of externalizing behavior problems or delinquency in children decrease the likelihood of later degrees of parents' knowledge. Accordingly, parents' monitoring knowledge and children's behavioral outcomes/school delinquency may mutually shape each other over time.

Although previous longitudinal research has demonstrated long-term cross-lagged relations between parents' monitoring knowledge and children's externalizing behavior problems or school delinquency, it remains unknown about links between trajectory patterns of parents' knowledge and children's externalizing behavior problems or school delinquency. Moreover, despite some recent studies ever examined trajectory patterns of parents' monitoring knowledge among children living in working- or middle-class families from early to middle/late adolescence (Larid et al., 2008; Spano et al., 2012), their work did not investigate links between those

trajectory groups of parents' knowledge and children's externalizing behavior problems or school delinquency. Extending their work, the present study examined such links as well as focuses on internalizing behavior problems. In the present study, internalizing behavior problems are defined as actions that direct problematic energy toward the self, such as anxious, withdrawn, and somatic complaints (Achenbach & Rescorla, 2001a). These problems reflect psychological maladjustment.

To my knowledge, implication of mothers' monitoring knowledge for adolescents' internalizing behavior problems has been an underexplored area. Although high levels of mothers' monitoring knowledge has been consistently found as bringing the positive implication for externalizing behavior, high levels of this knowledge may not also bring positive implication for internalizing behavior, based on the view of importance of developing autonomy in adolescence. While parent-child closeness is important for adolescents' psychological adjustment, adolescents with parents who are overprotective may be faced with barriers in establishing independence, which in turn leads to their disposition to psychological adjustment problems (Collins & Stenberg, 2006). Indeed, previous findings have pointed that adolescents with parents who are overprotective tend to report depressive and anxious symptoms (Holmbeck et al. 2000; MacElhaney & Allen, 2001). Since high levels of mothers' monitoring knowledge may reflect their overprotection of children's daily activities, the high levels of this knowledge may be associated to internalizing behavior problems.

Alternatively, high levels of mothers' monitoring knowledge may be a protector based on the view of importance of parent-child closeness in adolescence. Although adolescence is a period to develop autonomy, maintaining parent-child closeness remains important for adolescents' psychological adjustment (Collins & Stenberg, 2006). Previous studies have found

that adolescents who are granted too much autonomy and conceal a lot of secrecy tend to report psychological adjustment problems (internalizing symptoms) (e.g., Allen et al., 1996; Chen & Dornbusch, 1998; Engels et al., 2006). These studies further explained that their disposition to psychological problems may be due to their feeling of being distant and alienated from their parents. From this view, family dynamics facilitating parent-child closeness—such as parents’ active supervision of their children’s activities or children’s voluntary disclosure—may prevent children’s internalizing behavior problems. Since both parents’ supervision and children’s disclosure are important resources of mothers’ monitoring knowledge, high levels of mothers’ monitoring knowledge may be linked to or prevent internalizing behavior problems. Given that African Americans and Latinos place great emphasis on parent-child connectedness and family cohesion, high levels of mothers’ long-term monitoring knowledge may be a protector for adolescents’ internalizing behavior problems.

The present study aims to trace adolescents from early to late adolescence for purposes of examining how trajectory groups of mothers’ knowledge are linked with the levels of children’s adjustment in externalizing and internalizing behavior area as well as school delinquency in late adolescence of African Americans and Latinos living in low-income families (at the time of Time 3 data collection). The present study surmised that consistently high or slowly declining levels of mothers’ monitoring knowledge would be linked to low levels of externalizing and internalizing behavior problems as well as school delinquency in late adolescence for both ethnicities.

3.5 Chapter Summary

The current scholarly research has noted whether parents’ monitoring knowledge is impeded or facilitated by socio-environmental factors in family and neighborhood contexts,

children's characteristics, and factors of adaptive culture; and also how parents' knowledge is linked to children's externalizing behavior problems and delinquency. However, more efforts are needed to investigate longitudinal associations of parents' knowledge with the aforementioned impediments, facilitators, and children's other adjustment (i.e., internalizing behavior). Specifically, the present study examined the aforementioned factors, including these adolescents' neighborhoods (i.e., neighborhood problems and social cohesion), family environments (i.e., mothers' parenting styles/behaviors [including authoritative parenting, behavioral control, and harsh discipline], family routines, and mothers' work hours), adaptive culture (i.e., grandmothers' childrearing involvement), and adolescents' characteristics (i.e., child gender). In terms of children's adjustment outcomes, the present study examined adolescents' externalizing and internalizing behavior problems and school delinquency. Two potential moderating effects were also tested. In examining mothers' work, the interaction of household arrangement by grandmothers' childrearing involvement was tested. In examining child gender, the moderating effect of household arrangement is tested.

Chapter 4: Research Methodology

The present study used a three-wave longitudinal survey dataset of the *Welfare, Children & Families: A Three-City Study* (Cherlin, 1999; Cherlin et al., 2001; Angel et al., 2009). The *Three-City Study* is a longitudinal project that aims to assess the well-being of low-income families and adjustment of their children in the post-welfare reform era. This study recruited low-income households in three cities: Boston, Chicago, and San Antonio. In this section, demographics of low-income families in the focus three cities are first reviewed. Next, information is provided on the sampling procedure and the sample of the *Three-City Study*, analysis plan, and the focus measures.

4.1 Demographics of Low-income Families in Boston, Chicago, and San Antonio

4.1.1 Boston

Boston is the capital of Massachusetts and the largest city in this state (City of Boston. gov, 2013). During the past two decades (1990-2010), Boston has experienced a great economic transformation from manufacturing –based industrials to knowledge-based economy and increasingly economic growth (Kahn & Martin, 2011; a report of Boston Foundation). However, the official statistics indicate that overall poverty rate remains constant in 1990-2010. Among all Boston residents, 19.0% were below the federal poverty threshold (the national rate = 13.5%) in 1989, 0.5% increase in 1999, and 0.1% drops in 2005-2009 (the national rate = 14.3% in 2007-2011) (based on US Census Bureau: *Decennial Censuses* of 1990 and *American Community Survey: 2009 1-year estimates*, calculation conducted by Kahn & Martin, 2011). Among children under 18, 27.7% lived below the federal poverty threshold in 1989 while almost the same percentage of children lived in poverty in 2005-2009 (based on US Census Bureau: *Decennial Censuses* of 1990 and *American Community Survey: 2009 1-year estimates*, calculation

conducted by Kahn & Martin, 2011). Moreover, the poverty profile shows an increasing racial/ethnic disparity in family economic levels among children under 18. From 1990 to 2009, the rate of children living in poverty drops from 18% to 9.5% among European Americans. In contrast, during the same period, the rates of children living in poverty remain high among ethnic minorities (Latinos: 45% in 1990 and 40% in 2005-2009; African Americans: 34% in 1990 and 35% in 2005-2009; Asians: 33% in 1990 and 31% in 2005-2009). Further, families with children in poverty were primarily concentrated in single-mother headed families across ethnic/racial groups. For example, of households in poverty and with related children under 18, 68% European American, 82% Latino and 89% African American households were headed by single mothers in 1999; and 72% European American, 93% Latino and 86% African American households were headed by single mothers in 1999 (computation based on Census 2000 Summary File 3 and U.S. Census Bureau, 2006 American Community Survey).

Low-income households in Boston are highly concentrated in terms of both geography and demography (Kahn & Martin, 2011). In regards to family structure, single-mother headed families are highly clustered in this city and their niches are characterized as poverty, high unemployment, and dense houses. In regards to racial/ethnic background, most of minority households, including those of Latino, African, and Asian origins, are highly clustered in high-poverty communities of Boston. In contrast, the majority of European Americans (80% in 2005-2009) reside in the areas characterized as prosperous economy and new and developing neighborhoods. This racial residential segregation is reflected in the phenomenon that minority children are more likely to grow up in low-income households compared to their European American counterparts in Boston.

4.1.2 Chicago

According to the global cities index 2010 of Foreign Policy website (2013), Chicago has the fourth-largest gross domestic product (GDP) in the world and one of the most important centers of commerce and trade in the world, which shows that this city is economically prosperous overall. However, the poverty rate in this city remains higher than the national average during the past decade. Among all Chicago residents, 19.6% were below the federal poverty threshold (the national rate = 13.5%) in 2000, while 21.4% were in 2007-2011 (the national rate = 14.3% in 2007-2011) (US Census Bureau, 2013a, 2013b). The poverty rate among children underwent fluctuation during the past two decades, with rising to 40 % in the mid-1990s, dropping to 28% in 2000, and rising again to 32% in 2007-2011. In Chicago, minority children are more likely to live in the households with incomes below the federal poverty threshold. In 2000-2011, the rate of children living in poverty remained 8% to 9% among European Americans. In contrast, during the same period, the rates of children living in poverty were rising among ethnic minorities (Latinos: 24.8% in 2000 and 36% in 2011; African Americans: 40.1% in 2000 and 50.7% in 2011; Asian Americans: 21.3% in 2000 and 20.2% in 2011). Among Latino children, the poverty rate is higher among those from Puerto Ricans than other major groups, i.e., Mexicans and Guatemalans. Like children residing in Boston, children in poverty are more likely to be reared by single mothers, specifically among African Americans. For example, of households in poverty and with related children under 18, compared to 43% European American and 36% Latino households, 81% African American households were headed by single mothers in 1999; and compared to 60% European American and 43% Latino households, 83% African American households were headed by single mothers in 2006

(computation based on Census 2000 Summary File 3 and U.S. Census Bureau, 2006 American Community Survey).

In Chicago, although low-income households had been distributed toward this city's outer edges, family poverty remained concentrated in a number of communities in the city's near west and near south sides between 1990 and 2005 (George, Dilts, Yang, Wasserman, & Clary, 2007; a report of Chapin Hall Center for Children at the University of Chicago). Moreover, African Americans and Latinos are also highly clustered in these low-income communities. This is reflected in the phenomenon that African American and Latino children are more likely to be exposed to neighborhood poverty compared to their European American counterparts in this city. In 1999, for example, while 5.8% European American children were exposed to neighborhood poverty, the rate for Latino children (14.5%) was about 2.5 times and the rate for African American children (22.7%) was about 4 times (based on U.S. Census Bureau, 2000 Census, Summary File 3, calculation conducted by Diversitydata.org and Harvard School of Public Health, 2013a).

4.1.3 San Antonio

San Antonio is the second most populous city in Texas and ranked as the seventh most populous city in the United States (Mildenberg, 2011; a newspaper article of the Washington Post). Like Boston and Chicago, the poverty rate in this city remains higher than the national average during the past decade. Among all San Antonio residents, 17.3% were below the federal poverty threshold (the national rate = 13.5%) in 2000, and 2% increase in 2007-2011 (the national rate = 14.3% in 2007-2011) (US Census Bureau, 2013c, 2013d). Among children under 18, about one in four children lived in families with household incomes below the federal poverty threshold (24.3% in 2000 and 27.6% in 2007-2011). The rate of children in poverty is

primarily concentrated in ethnic/racial minorities. In 2000, while only 7.3% European Americans lived in families with household incomes below the federal poverty threshold among children under 18, 28.5 % Latinos and 26% African Americans lived in the same condition. Based on the summary of Diversitydata.org and Harvard School of Public Health (2013b), approximately 39% European American children who attended primary school lived in poverty, while 51% Latino and 53% African American children attending primary school lived in poverty from 1999 to 2011. The majority of population in this city is composed of Latino origin (approximately 50.4% in 2000 and 54.1% in 2010) so that Latino children are the largest group in poverty overall. Like children residing in Boston and Chicago, children in poverty are more likely to be reared by single mothers. For example, of households in poverty and with related children under 18, 55% European American, 50% Latino, and 82% African American households were headed by single mothers in 1999; and 64% European American, 65% Latino, and 71% African American households were headed by single mothers in 2006 (computation based on Census 2000 Summary File 3 and U.S. Census Bureau, 2006 American Community Survey).

Just like low-income households in Boston and Chicago, low-income households in San Antonio are demographically and geographically concentrated (Firestone, 2007). This city is in general viewed as being composed of two contrast worlds, with the west side being characterized by poverty, unemployment, crime, old houses, and higher rate of school drop-out while the north side is characterized by prosperous economy, better school, and many developing new communities. Just as family poverty is strongly concentrated in the west side of this city, Latinos are also clustered in this district. In contrast, European Americans are highly clustered in the north side. This geographical and demographical segregation aggravates racial/ethnic

socioeconomic gap in San Antonio. Also, this segregation hinders opportunities for Latinos to gain upward economic mobility and higher educational attainment.

4.2 The Sampling Procedure of the Three-City Study

Using the approach of stratified random sampling, the *Three-City Study* sampled low-income families living in low-income neighborhoods in Boston, Chicago, and San Antonio. A household was eligible if the household income was less than 200% of the federal poverty threshold. A neighborhood was eligible if 20% households in the neighborhood lived below the federal poverty threshold in 1990 (Angel et al., 2009; The Inter-University Consortium for Political and Social Research (ICPSR), 2008, July). The sampling unit of neighborhoods is called a primary unit (i.e., PU). This study used the PUs defined by US Census blocks in 1990. PUs are stratified by ethnicity or race. In each focus city, this study selected three large groups (i.e., African Americans, Latinos, and European Americans) as the first level of sampling strata (The Inter-University Consortium for Political and Social Research (ICPSR), 2008, July). Under each racial group, PUs fitting into the definition of low-income neighborhood were randomly sampled, with the exception of African American and Latino PUs in Boston and African American PUs in San Antonio. For the three bodies of PUs, all low-income PUs were selected given that populations were small. The third level of sampling strata is segments; each of them has 90-120 households. Within each segment, dwelling units were randomly sampled.

Overall, this study randomly sampled 40,000 dwelling units to screen whether the households met the sampling criteria of this study. The sampling criteria include such as family income (below 200% of the federal poverty threshold) and children's age (between 0-4 or 10-14). Another key criterion was to allow the demographic profile of the final sample to be generalized to the demographic profile of the low-income population in the three cities. Some examples of

demographic indicators include the caregiver's marital status, the household head's race/ethnicity, and family members' status of social service receipt. In each recruited household, interviews were administered to one focal child and his/her primary female caregiver (Angel et al., 2009). These female caregivers are referred to as the mothers given that over 90% were biological or adoptive mothers. All interviews were face-to-face and conducted by a computerized device. Interviews of the mothers took approximately two hours, while interviews of the adolescents took approximately one hour.

4.3 The Sample of the Three-City Study

The sample of the *Three-City Study* was 2,402 low-income households with a child aged 0-4 or 10-14 years at Time 1 (between March 1999 and December 1999) in low-income neighborhoods in Boston, Chicago, and San Antonio. Of these participating households, 1,242 households have a child aged 0-4 and 1,160 households have a child aged 10-14. According to recruiting city, 926 households were from Boston, 762 households from Chicago, and 714 households from San Antonio. The sample was primarily comprised of African Americans and Latinos, with 47% Latinos, 42% African Americans, 8% European Americans, and 3% of other races (including American Indians, Asian Americans, and biracial children). Approximately 40% of the households were receiving cash welfare payments when participating in this study. Only 15.5% of the children were living with their biological father at the time of the first-wave interview. An average of 16 months after Time 1, the Time 2 data collection occurred between September, 2000 and June, 2001, with approximately 88% of the original sampled households participating in this follow-up study. An average of four years after Time 2, the Time 3 data collection occurred between February, 2005 and January, 2006, with a retention rate of approximately 80%.

The proposed research focuses on the subsample of mother-adolescent dyads at Time 1 ($N = 1160$; the age of the adolescents: $M = 11.95$, $SD = 1.43$; the age of the mothers: $M = 38.38$, $SD = 8.46$). The *Three-City Study* followed up both the adolescents who were reared by continuous and new caregivers. The present study only focuses on the adolescents who were reared by continuous caregivers and participated at all three time points. This criterion yields 741 eligible mother-adolescent dyads, with the adolescents aged 10-14 ($M = 12.26$, $SD = 1.54$) at Time 1; these adolescents consist of 58 European Americans, 325 African Americans, 361 Latinos, and 10 adolescents of other races (including American Indians and those not reporting race). Based on the purpose of this study, analyses only involve the mother-adolescent dyads with African- and Latino-origins. Further examination indicates that six African American and seven Latino mother-adolescent dyads did not report levels of mothers' monitoring knowledge across all the three time points or had missing values over half of the variables focused in the present study. Excluding these dyads yields 319 African American and 354 Latino mother-adolescent dyads for further analyses. Of the focus households, 20.2% were receiving cash welfare payments when participating. The majority (82.6%) of the focus Latino adolescents were second generation or beyond, given that they were U.S.-born and their parents were either foreign- or U.S.-born. Among the Latino mothers, 165 (46.6%) were second generation or beyond and 189 (53.4%) were first generation (60 born in Mexico, 56 in Puerto Rico, 39 in Dominican Republic, and 34 in other countries).

The average years the participant mothers received formal education were about twelve years for both ethnicities, meaning that on average both African American and Latino mothers had completed high school. However, African American mothers received longer formal education than Latino mothers ($t(673) = 4.04$, $p < .001$). Of the focus participants, 74.1%

reported the monthly household income. The ranges of monthly household income were wide for both ethnicities, with \$0 to \$4,989 for African Americans and \$0 to \$4,450 for Latinos. The two ethnicities were similar in monthly household income ($t(502) = .41, p = .684$). The household arrangements were reported at Time 1 and Time 2. Among the Latinos, the stability of household arrangements was high across types (with a range between 52% and 69%) from Time 1 to Time 2, with the exception of the single-mothers living with kin (29% of this type at Time 1 staying the same at Time 2). Among the African Americans, the stability of household arrangements was high for the lone single mothers, the single mothers living with a male partner, and the single mothers living with grown child (with a range between 52% and 71%) from Time 1 to Time 2, but was low for the household with the focal child's biological father (36% of this type at Time 1 staying the same at Time 2) and the single-mothers living with kin (44% of this type at Time 1 staying the same at Time 2). Considering the types of household arrangements at Time 2 were reported at the middle point of the Three-City Study, the present study regarded the household arrangements at Time 2 as representative of the average types across times and used for further analyses. A chi-square goodness-of-fit test was conducted to determine if African Americans and Latinos were comparable in the types of household arrangements at Time 2. The result indicated that there was a significant difference in the proportion of types of household arrangements by ethnicity ($\chi^2(4, N = 673) = 14.07, p = .007$). Follow-up tests were conducted by examining the standardized residuals. The results indicated that the difference between African Americans and Latinos was explained by the proportion of two-parent families (the focal child's biological father lives in the household). Specifically, the standardized residual for two-parent families was -2.10 for African Americans and 2.00 for Latinos, which suggests that the observed percentage for African Americans was lower than the expected percentage while the observed percentage

for Latinos was higher than the expected percentage. The percentages for the types of household arrangements and other demographic information are shown in Table 1 by ethnicities.

Table 1: Demographic Information According to Ethnicity

	African American (n = 319)			Latino (n = 354)		
Variable	%	<i>M</i>	<i>SD</i>	%	<i>M</i>	<i>SD</i>
Female	48			48		
Youth Age		12.24	1.37		12.28	1.43
Parental Education (Years)		11.08	2.10		10.38	2.33
Monthly Household Income		1145.21	926.27		1176.70	807.39
Household Arrangements						
Two Parents (The Focal Child's Biological Father Lives in the Household)	9.4			17.8		
Two Parents (The Mother Lives with a New Partner)	15.6			19.2		
Mother Only	53.9			44.6		
Mother and Grown Child	14.4			14.1		
Mother and Kin	6.6			4.2		
Sample City						
San Antonio	23			31		
Boston	35			38		
Chicago	42			31		

Note. Youth age, parental education, and monthly household income were reported at Time 1; and household arrangements was reported at Time 2.

4.4 Analysis Plan

The proceeding section detailed how the data from the *Three-City Study* are analyzed, as well as how the analyses addressed each of the research questions.

4.4.1 Analyses of Data from the Three-City Study

Analyses of data from the *Three-City Study* involved four domains: 1) to identify trajectory groups of mothers' monitoring knowledge for both ethnicities; 2) to identify correlates of trajectory groups of mothers' monitoring knowledge from potential antecedents, including

adolescents' neighborhood condition (neighborhood problems and social cohesion), family environment (family routines, mothers' parenting styles/behaviors [including harsh discipline, behavioral control, authoritative parenting], and mother-child relationship), and mothers' socio-environmental experiences (mothers' work hours), adaptive culture (grandmother's involvement in childrearing), and adolescents' gender; 3) to examine interactions between mothers' work hours and grandmothers' childrearing as well as between gender and family arrangements for predicting trajectory groups of mothers' monitoring knowledge; and 4) to predict adolescents' adjustment outcomes (including externalizing and internalizing behavior problems and school delinquency) by trajectory groups of mothers' monitoring knowledge.

The domain (1) was conducted by using growth mixture modeling (GMM; Muthén, 2004). GMM is an extension of conventional growth modeling. Conventional growth modeling assumes that "all individuals are drawn from a single population with common population parameters" (Muthén, 2004, p. 348). In other words, the individuals share a common intercept and slope (or shape) of the growth curve. In contrast, GMM relaxes this assumption by allowing heterogeneity of a population. That is, a population consists of subpopulations that are different in terms of parameters (e.g., the mean intercept and slope). Using this analysis approach, the present study identified latent classes of trajectories of mothers' monitoring knowledge in African Americans and Latinos as well as compare whether the two groups are different in types of latent classes and prevalence of each class (if the two groups do not differ in the types of latent classes). GMM was conducted by Mplus 7.0 (Muthén & Muthén, 1998-2012). Adolescents participated at Time 1 interview at different times, ranging from age 10 to 14. To allow adolescents with different assessment time, RANDOM was selected to estimate a growth model with random slopes across participants (Muthén & Muthén, 1998-2012).

The domain (2) to (4) were conducted by logistic or multinomial logistic regression analysis in which latent classes that are identified in the domain (1) were regressed on the predictors mentioned in domain (2) and examining moderating effects mentioned in domain (4). Logistic regression analysis is conducted if the number of identified latent classes is two, while multinomial logistic regression analysis is conducted if the number of identified latent classes is more than three. For domain (3), ordinary least square (OLS) regression analysis was conducted for the outcome variables—externalizing behavior problems and school delinquency, given that both the outcome variables were based on continuous scales. For the model predicting internalizing behavior problem, ordered logistic regression analysis was conducted given that this outcome variable was based on an ordinal scale.

4.4.2 Research Questions

- 1.1) How does mothers' monitoring knowledge change over time among adolescents in low-income families for African Americans and Latinos?
- 1.2) Are there different patterns of trajectories of mothers' knowledge between African and Latino Americans?

GMM was conducted to identify trajectory groups of mothers' monitoring knowledge for African Americans and Latinos separately. The two ethnicities were compared in terms of types of latent classes and prevalence of each class (if the two groups do not differ in the types of latent classes) qualitatively.

- 2.1) What socio-contextual factors in neighborhoods and the family context, factors of adaptive culture, and adolescents' own characteristics facilitate mothers' monitoring knowledge over time for African Americans and Latinos?

2.2) What socio-contextual factors in neighborhoods and the family context, factors of adaptive culture, and adolescents' own characteristics impede mothers' monitoring knowledge over time for African Americans and Latinos?

2.3) Are there any differences in facilitators and impediments to mothers' monitoring knowledge over time between African Americans and Latinos?

To identify the correlates that facilitate and impede mothers' monitoring knowledge, logistic regression analysis was conducted to regress trajectory groups of mothers' knowledge on average levels of each of these factors from Time 1 to Time 3 separately. These factors include neighborhood conditions (neighborhood problems and social cohesion), family environments (family routines, mothers' parenting styles/behaviors, and mother-child relationship), mothers' socio-environmental experiences (mothers' work hours), adaptive culture factors (grandmothers' childrearing involvement), and adolescents' characteristics (gender). For both ethnicities, the controlled variables for each factor included types of family arrangements and mothers' educational level. Only for the Latinos, mothers' acculturation was also controlled for given that the previous discussion in the present study pointed links between mothers' acculturation and parenting styles or behaviors. Four dummy codes were used for family arrangements (lone single mother as the reference group): two parents (the focal child's biological father lives in the household), two parents (the mother lives with a new partner), single mother living with grown child, and single mother with living kin. One single dummy code was used for gender (1 = female). The way to create dummy codes for acculturation was discussed in the following section of measures. Results based on logistic or multinomial logistic regression analysis would show what factors facilitate mothers' knowledge over time (i.e., constantly high, increasing, or slowly declining) and what factors impede mothers' knowledge over time (i.e., declining or

constantly low). The impediments and facilitators for the two ethnicities were compared qualitatively.

Two moderating effects were focused: a) the moderating effect of grandmothers' childrearing involvement on associations between trajectory groups of mothers' knowledge and levels of their work hours, and b) two-way interactions of household arrangement with male adult by child gender for the outcome variable of mothers' monitoring knowledge. For a), the present study examined the moderating effect of average levels of grandmothers' childrearing involvement from Time 1 to Time 3. For b), the household arrangement with male adult was coded into lone single mothers, two parents (the focal child's biological father lives in the household), and the single mothers living with a male partner or other male adult figures (i.e., grown children and relatives). The single mothers living with a male partner and those with other male adult figures were combined into one category since a small number of mothers living with grown male children and male relatives.

Six hypotheses were tested:

H1: In terms of family environment, it is expected that for both ethnicities, mothers maintain high levels of knowledge over time for the adolescents perceiving the following characteristics of family environment in averagely high levels from Time 1 to Time 3: 1.a) mothers' authoritative parenting, 1.b) mothers' harsh discipline, 1.c) mothers' behavioral control, and 1.d) well-established family routines. One hypothesis is proposed for mothers' work hours: 1.f) mothers' averagely long work hours from Time 1 to Time 3 are linked to consistently low or a decline in their monitoring knowledge over time.

H2: In terms of neighborhoods, ethnic differenced are expected. Specifically, 3.a) the averagely high levels of neighborhood problems and 3.b) the averagely low levels of neighborhood

cohesion are linked to consistently low or decreasing levels of mothers' monitoring knowledge for African Americans, but not for Latinos.

H3: In terms of adaptive culture factors, it is expected that for both ethnicities, mothers will maintain high levels of knowledge over time when mothers receive averagely high levels of grandmothers' childrearing involvement from Time 1 to Time 3.

H4: In terms of adolescents' characteristics, it is expected that for both ethnicities, mothers' knowledge will remain higher when adolescents are girls.

H5: For both ethnicities, associations between average low levels of mothers' knowledge and averagely long work hours from Time 1 to Time 3 are weaker for mothers receiving averagely high levels of grandmothers' childrearing involvement from Wave 1 to Wave 3.

H6: For both ethnicities, lone single mothers will gain less knowledge about boys than the married mother (living with the focal child's biological father) or the single mothers living with a male partner or other male adult figures (i.e., grown child and kin) in the household.

3.1) How is mothers' longitudinal monitoring knowledge associated with adolescent adjustment in terms of various domains, including externalizing and internalizing behavior problems, and school delinquency in late adolescence among adolescents in low-income households for African Americans and Latinos?

3.2) Are there any differences in patterns of associations between African and Latino Americans over time?

Associations between trajectory groups of mothers' monitoring knowledge and adolescent adjustment at Time 3 were examined for both ethnicities. This analysis addresses how change in mothers' knowledge over time predicts adolescents' adjustment in late adolescence. Second, the present study compared whether the two ethnicities were different in the types of the

adolescent adjustment that is significantly predicted by mothers' monitoring knowledge qualitatively.

One hypothesis was tested:

H7: For both ethnicities, it is surmised that consistently high levels of mothers' knowledge predict the following adolescent outcomes at Time 3: 7.a) low levels of externalizing behavior problems, 7.b) low levels of internalizing behavior problems, and 7.c) low levels of school delinquency. The present study did not surmise ethnic differences since the previous study has not yet evidenced.

4.5 Measures

The *Three-City Study* used many existing measures and created measures for assessing low-income households' family environment, neighborhood conditions, and children's adjustment. The focus measures reported by the mothers included: behavioral control, authoritative parenting, family routine, their works' hours per week, mothers' linguistic acculturation, grandmothers' childrearing involvement, neighborhood problems, neighborhood cohesion, and internalizing behavior problems; the focus measures reported by the adolescents included: mothers' monitoring knowledge, harsh discipline, externalizing behavior problems, and school delinquency. The focused measures were discussed as follows. All the mean of the following measures at each time were averaged to create the average levels of the measures from Time 1 to Time 3 for further analyses, with the exception of maternal monitoring knowledge, mothers' work hours, and adolescents' internalizing and externalizing behavioral problems and delinquency. The ways of transformation of the above five variables are discussed in the respective sections.

Maternal Monitoring Knowledge. The *Three-City Study* assessed maternal monitoring knowledge by using the measure of parental monitoring knowledge developed by Steinberg, Mounts, Lamborn, & Dornbusch (1991). Five items assessed adolescents' perception of how much the mother knows about their friends, activities after school, activities at night, the use of free time, and money use. Responses were given along a 3-point Likert-type scale, including: 0 = doesn't know, 1 = knows a little, and 2 = knows a lot. The final factor solution resulting from the exploratory factor analyses (EFAs) and confirmatory factor analyses (CFAs) indicates that all items were loaded on one latent factor and the loadings of all the items were equivalent across ethnicities. All the five items were averaged to create the mean maternal monitoring knowledge at each time for both ethnicities. The mean maternal monitoring knowledge at each time was used for further analyses of growth mixture modeling.

Harsh Discipline. The *Three-City Study* developed the measure of maternal punishment based on the guidance of psychological experts in family functioning (Winston, 1999). Across all the time points, five maternal-reported items on punitive parenting were used to assess maternal punishment. The five items assessed youth perception of whether the mother scolded, spanked, threatened to spank, punish her child if the child didn't behave, threatened to put the child out of the house during the past 12 months. Responses were given along a 6-point Likert-type scale, including: 0 = never in past 12 months, 1 = several times in the past 12 months, 2 = once a month, 3 = several times a month, 4 = once a week, and 5 = more than once a week. The final factor solution resulting from the EFAs and CFAs excluded two items that had equivalent loadings on the maternal punishment factor across times within each ethnicity but had different loadings between the African Americans and the Latinos. The two excluded items were "How often caregiver spanks/hits the child" and "How often caregiver threatened to kick the child out". The

rest three items were averaged to create the mean maternal punishment at each time for both ethnicities.

Authoritative Parenting. The *Three-City Study* developed the measure of authoritative parenting based on the guidance of psychological experts in family functioning (Winston, 1999). The present measure of authoritative parenting assessed two primary elements of authoritative parenting style, i.e., parental warmth and control, which is in line with the definition of Baumrind (1971). At Time 1 and 2, authoritative parenting was assessed with five items, with two items measuring parental warmth (including praising and understanding the child's feeling) and three items measuring parental control (including making clear rules, explaining the reason of setting rules, and having strict punishment while the child was misbehaved). At Time 3, the items assessing praising and making clear rules were dropped in the *Three-City Study*. Responses were given along a 4-point Likert-type scale, including: 0 = definitely false, 1 = sort of false, 2 = sort of true, and 3 = definitely true. In order to have the same measurement construct across times, only the three items administrated at all the time points were used for further analyses. The final factor solution resulting from the EFAs and CFAs indicates that all the three items were loaded on one latent factor and the loadings of all the items were equivalent across items for both ethnicities. The three items were averaged to create the mean authoritative parenting at each time for both ethnicities.

Behavioral Control. The *Three-City Study* did not directly assess mothers' perception of restrictive parenting, but assessed their perception of permissive parenting. The measure of permissive parenting was developed based on the guidance of psychological experts in family functioning (Winston, 1999). This study used the reversed score of permissive parenting as the index of the levels of mothers' restrictive parenting. The measure of permissive parenting was

only administrated at Time 1 and 2. Across the two time points, permissive parenting was assessed with five items; some examples included: “I avoid giving the child chores” and “I drop a rule if the child objects to it.” Responses were given along a 4-point Likert-type scale, including: 0 = definitely false, 1 = sort of false, 2 = sort of true, and 3 = definitely true. The final factor solution resulting from the EFAs and CFAs indicates that all the five items were loaded on one latent factor and the loadings of all the items were equivalent across items for both ethnicities. Thus, the five items were reversed and averaged to create the mean behavioral control at each time for both ethnicities.

Family Routine. The Three-City Study developed the measure of family routine based on the family routine inventory (Jensen et al., 1983). Across all the time points, five items were administrated to assess mothers’ perception of how often their family has family time and eat breakfast and dinner at the same time, her child and she have homework/nightly rituals, and the child has the same bedtime. Responses were given along a 4-point Likert-type scale, including: 0 = almost never, 1 = sometimes, 2 = usually, and 3 = always. The final factor solution resulting from the EFAs and CFAs indicates that all the five items were loaded on one latent factor and the loadings of all the items were equivalent across items for both ethnicities. Thus, the five items were averaged to create the mean mother-child anger and alienation at each time for both ethnicities.

Mothers’ Overtime Work. The Three-City Study asked the mother how many hours she usually worked per week at main job at each time point. Since the present study focused on whether the mother worked overtime, the raw work hours per week was recoded into a dummy variable—the status of overtime work—by coding 0 for work hours below 40 and 1 for work hours larger than 40 at each time point. Forty-hour was chosen as the threshold because working over 40 hours per

week is defined as overtime work (United States Department of Labor, n.d.). The status of overtime work across times were summed and used as an index for the degrees of overtime work from Time 1 to Time 3.

Mothers' Linguistic Acculturation. Because the Latino sample in the present study was diverse in linguistic use and fluency in English, an index of English fluency and preference was served as a proxy for acculturation. English fluency and preference has often been used as an indicator of acculturation in many acculturation measures (e.g., Cuellar, Harris, & Jasso, 1980; Marin & Gamba, 1996) or a proxy for acculturation. This is because immigrants tend to prefer English to Spanish if they are highly acculturated to the US (Griffith & Villavicencio, 1985; Krause, Bennett, & Van Tran, 1989). Based on the suggestion of Loukas and colleagues (2007), the present study used a two-step process to infer levels (high versus low) of mothers' linguistic acculturation. First, the mothers reporting English as their native language were classified into high-acculturation group. The mothers reporting English as not their native language ($N = 230$) were further inferred to levels of linguistic acculturation based on their fluency in English. Mothers were asked how well they could speak, read, and write along a 4-point Likert-type scale ranging from 0 ("not at all") to 3 ("very well"). The present study used the criterion of Loukas et al. (2007) in which mothers who scored 2 or higher in average were classified into high-acculturation group. Among those with English as not their native language, 81 were classified into high acculturation. Overall, 208 Latino mothers were classified into high-acculturation group and 146 were classified into low-acculturation group. The high-acculturation mothers tend to be US-born, with 150 US-born of the 208 high-acculturation mothers. Similarly, the low-acculturation mothers tend to be foreign-born, with 131 foreign-born of the 146 low-acculturation mothers. The levels of linguistic acculturation for the African American sample

was not used for further analyses because there was too little variability in acculturation among the African American participants, with 1.6% classified as low-acculturation group.

Grandmothers' Childrearing Involvement. In the Three-City Study, one item was used to assess whether the child's grandmother was involved in childrearing. That item asked the mother "How much responsibility does the grandmother take in the child's daily care, such as preparing food for the child or helping him/her get dressed?". The response was given along a 3-point Likert-type scale, including: 0 = none, 1 = some responsibilities, and 2 = complete responsibilities. The raw value at each time was averaged to produce the average levels of grandmothers' childrearing involvement from Time 1 to Time 3 for further analyses.

Neighborhood Problems. The *Three-City Study* developed a 11-items measure of neighborhood problems. Neighborhood problems were measured by the mother's ratings of problems (e.g., unsafe street, unemployment, burglaries and thefts, gangs, and unsupervised children) in her neighborhood. Responses were given along a 3-point Likert-type scale, including: 0 = not a problem, 1 = somewhat a problem, and 2 = a big problem. The final factor solution resulting from the EFAs and CFAs indicates that all the eleven items were loaded on one latent factor and the loadings of all the items were equivalent across items for both ethnicities. Thus, all the items were averaged to create the mean neighborhood problems at each time for both ethnicities.

Neighborhood Cohesion. Robert Sampson's Collective Efficacy Scale (Sampson, Raudenbush, & Earls, 1997) was administrated to the mother to assess social cohesion of neighborhood. At each time, four items of this scale measured levels of perceived social cohesion (e.g., "People around here are willing to help neighbors," and "people in this neighborhood can be trusted"). Responses were recorded along a 4-point Likert-type scale ranging from 0 ("strongly disagree") to 3 ("very likely"). The final factor solution resulting from the EFAs and CFAs indicates that all

the four items were loaded on one latent factor and the loadings of all the items were equivalent across items in both groups. Thus, all the items were averaged to create the mean neighborhood cohesion at each time across the entire sample.

Internalizing Behavioral Problems. At Time 3, three subscales of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001a) for ages 6-18 were used to assess mothers' perception of levels of their children's internalizing behavioral problems. The three subscales were anxious, withdrawn, and somatic complaints. For the adolescents aged above 18, the same three subscales of the Adult Behavior Checklist (AC; Achenbach & Rescorla, 2001b) were administered to the adolescents to assess their perception of anxious and withdrawn problems and somatic complaints. The investigators of the *Three-City Study* summed the three subscales, created the t-score of internalizing behavioral problems, and transformed the t-score to create clinical classification for internalizing behavioral problems. Scores below 95th percentiles are considered in the normal range, scores between the 95th and 98th percentiles are considered in the borderline clinical range, and scores in the 98th-100th percentile are considered in the clinical range. The clinical classification for internalizing behavioral problems was used for further analyses.

Externalizing Behavioral Problems. The Three-City Study assessed adolescents' externalizing behavioral problems by adapting the items from the National Longitudinal Study of Youth (Borus, Carpenter, Crowley, & Daymont, 1982) and the Youth Deviance Scale (Gold, 1970; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). At each time, the adolescents were administered six items that assessed deviant behavior including stealing, getting in trouble with the police, damaging property, carrying a weapon, attacking someone, and fighting during the past year. The adolescents were also administered another five items that assessed the use of

cigarettes, alcohol, marijuana, and hard drug during the past year. Responses were given along a 4-point Likert-type scale, including: 0 = never, 1 = once or twice, 2 = several times, and 3 = often. The Three-City study did not provide information on each single item at Time 3. Thus, the EFAs and CFAs were not allowed to be conducted. Yet, the investigators of the *Three-City Study* conducted factor analysis, which indicates that the deviant behavior and the drug use subscales were loaded into one factor. Accordingly, they averaged the z-scores of all the eleven items to create one average z-score as an index for externalizing behavioral problems. The present study used this average z-score for further analyses.

School Delinquency. The Three-City Study assessed adolescents' school delinquency by adapting the items from the National Longitudinal Study of Youth (Borus, Carpenter, Crowley, & Daymont, 1982) and the Youth Deviance Scale (Gold, 1970; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). At each time, the adolescents were administered with five items that assessed school delinquency including the following behaviors: skipping school, copying homework, being suspended or expelled, getting detentions, and cheating during the past year. Responses were given along a 4-point Likert-type scale, including: 0 = never, 1 = once or twice, 2 = several times, and 3 = often. Like the measure of externalizing behavioral problems, the *Three-City study* did not provide information on each single item at Time 3. Thus, the EFAs and CFAs were not allowed to be conducted. The investigators of the *Three-City Study* provided the mean of z-scores of all the five items, which was used in the present study.

4.6 Measurement Invariance Tests

Exploratory factor analyses (EFAs) and multiple-group confirmatory factor analyses (CFAs) were conducted to determine whether measurement constructs were similar or invariant between African Americans and Latinos for a series of measures for family environment (i.e.,

maternal monitoring, parenting styles/behaviors, and family routines) and neighborhood context (i.e., neighborhood problems and cohesion). The analyses were conducted by Mplus 7. A number of prior research has noted that the linear SEM (structural equation modeling) approach can produce biased estimation of fit indices, factor loadings, and spurious factors when an ordered categorical scale has small number of scale points (Bauer, 2005; Yang & Green, 2011). The research also suggests the nonlinear SEM approach should be chosen for ordered categorical scales. Accordingly, the nonlinear SEM approach was used to conduct the EFAs and the CFAs.

The EFAs were conducted for African Americans and Latinos separately to explore the measurement constructs. The results of EFAs showed that all measures for family environment and neighborhood context have one similar overarching factor among both groups. Next, multiple-group CFAs were conducted to determine equivalence in item loadings and thresholds. A series of nonlinear SEMs with different levels of invariance was conducted to determine whether the focus measures are configural invariance (with the same number of factors), weak invariance (with the same units of loading), and strong invariance (with the same thresholds of scale points in indicators). A series of chi-square difference tests were computed to determine whether two adjacent models are similar. Non-significant chi-square differences suggest that the two adjacent models are similar and higher level of invariance is present. If strong invariance is violated, partial invariance (i.e., item loadings are equivalent but thresholds of scale points in some items are not equivalent) is tested and chi-square difference test is also conducted to determine equivalence between configural invariance and partial invariance models. The results of CFAs showed that all the measures are partial invariance (i.e., item loadings are equivalent but thresholds of scale points in some items are not equivalent), with the exception of neighborhood cohesion that is strong invariance. Partial invariance was acceptable for all the measures given

that comparing ethnicities in factor means for the measures was not the focus of the present study (Bauer, 2005; Ployhart & Oswald, 2004). The exceptional measure was mothers' monitoring knowledge. Given that the present study estimated the trajectory of change in mothers' monitoring knowledge across three time points for each ethnicity, comparing the relative degrees of mothers' monitoring knowledge provides important information for estimating the initial level (the intercept) and the rate of change (the slope). Although chi-square difference test showed that the strong invariance and weak invariance models were significantly different, the results of the fit indices indicated that strong invariance model is good fit ($RMSEA \leq .07$ and $CFI \geq .95$; Hu & Bentler, 1999; Steiger, 2007). This suggests that strong invariance model for mothers' monitoring knowledge was well specified and able to represent the factorial structure. The fit indices are shown in Table 2 for the measures of mothers' monitoring knowledge and parenting styles/behaviors, and in Table 3 for family routine and neighborhood factors.

4.7 Reliabilities of the Measures for Family Environment and Neighborhood Context

Yang and Green (2011) point out that coefficient alpha can underestimate scale reliability because the three underlying assumptions are likely to be violated. These assumptions are: 1) classical item-score assumption: "Item scores are a simple sum of item true and error scores."; 2) tau equivalency assumption: "The same true scores underlie all items and equally contribute to all item scores. Within the framework of factor analysis, items have equal loadings on a single underlying factor."; and 3) uncorrelated errors assumption: "Item error scores between any pair of items are uncorrelated." (p.379; Yang & Green, 2011). Yang and Green also indicated that the SEM approach provides more precise estimation of scale reliability because it allows the above-

Table 2: Measures of Fit for Mothers' Monitoring Knowledge and Parenting Styles/Behaviors
for Multiple-Group Confirmatory Factor Analyses Among African Americans and Latinos

Across Times

Variable	Configural Invariance	Weak Invariance	Strong Invariance	Partial Invariance
Mothers' monitoring knowledge				
Chi-square	193.44	206.59	346.20	224.12
<i>df</i>	144	154	198	168
CFI	.99	.99	.97	.99
RMSEA	.03	.03	.05	.03
Δ Chi-square		13.15	139.61	30.68
Δ <i>df</i>		10	44	24
<i>p</i> value		.215	.001	.163
Harsh Discipline				
Chi-square	64.87	70.59	541.69	89.74
<i>df</i>	30	36	91	51
CFI	.98	.98	.77	.98
RMSEA	.06	.05	.12	.05
Δ Chi-square		5.72	471.10	24.87
Δ <i>df</i>		6	55	21
<i>p</i> value		.455	.001	.253
Authoritative parenting				
Chi-square	47.51	64.19	155.83	81.89
<i>df</i>	30	36	76	51
CFI	.98	.97	.92	.97
RMSEA	.03	.05	.06	.04
Δ Chi-square		16.68	91.65	34.38
Δ <i>df</i>		6	40	21
<i>p</i> value		.011	.001	.033
Behavioral Control				
Chi-square	146.14	146.94	219.50	159.08
<i>df</i>	59	63	105	75
CFI	.96	.96	.95	.96
RMSEA	.07	.06	.06	.06
Δ Chi-square		.80	72.56	12.14
Δ <i>df</i>		4	42	16
<i>p</i> value		.938	.002	.734

Table 3: Measures of Fit for Family Routine and Neighborhood Context for Multiple-Group

Confirmatory Factor Analyses Among African Americans and Latinos Across Times

Variable	Configural Invariance	Weak Invariance	Strong Invariance	Partial Invariance
Family routine				
Chi-square	272.09	278.80	523.49	309.58
<i>df</i>	144	154	224	165
CFI	.96	.96	.91	.96
RMSEA	.05	.05	.06	.05
Δ Chi-square		6.71	244.69	30.78
Δ <i>df</i>		10	80	21
<i>p</i> value		.753	.001	.077
Neighborhood problems				
Chi-square	1287.70	1273.52	1590.83	1296.12
<i>df</i>	918	940	1045	965
CFI	.98	.99	.98	.99
RMSEA	.03	.03	.04	.03
Δ Chi-square		14.18 ^a	317.31	8.42
Δ <i>df</i>		22	105	47
<i>p</i> value		.895	.001	1.000
Neighborhood cohesion				
Chi-square	161.1	165.9	261.94	189.26
<i>df</i>	78	86	141	111
CFI	.99	.99	.99	.99
RMSEA	.06	.05	.05	.05
Δ Chi-square		4.8	96.04	23.36
Δ <i>df</i>		8	55	33
<i>p</i> value		.779	.001	.893

mentioned assumptions to be violated. Accordingly, the SEM approach was conducted to compute the reliabilities of the measures for all the family environment and neighborhood context.

The SEM approach in estimating reliability involves two steps: 1) assessment of CFA models: “a series of CFA models are evaluated to determine the most appropriate model based on a researcher’s understanding of the scale of interest and the empirical fit of the models to the item data.”; and 2) estimation of the reliability coefficient: “using the parameter estimates from the model chosen in Step 1.” (p. 384, Yang & Green, 2011). Following the above steps, a series of CFAs were conducted to produce parameter estimates for all the measures across times for African Americans and Latinos. In line with the previous discussion in the section of the measurement invariance tests, the nonlinear SEM approach was used to conduct CFAs. Since the formula for computing the reliability coefficient based on nonlinear SEM approach is complex, Green and Yang’s (2009) SAS-program-based syntax was used to calculate the coefficient. All the coefficients are shown in Table 4 and 5 for African Americans and Latinos, respectively. The coefficient alphas were also reported. The reliabilities of all the measures were considered adequate for both ethnicities (above .70 for the measures with many items and .65 for the measures with few items; Kaplan & Saccuzzo, 2009; Schmitt, 1996), with the exception of authoritative parenting across all time points and harsh discipline at Time 1 that were considered low.

Table 4: Reliabilities of the Major Variables for African Americans

Variable	African Americans					
	Time1		Time2		Time3	
	Alpha	Nonlinear SEM	Alpha	Nonlinear SEM	Alpha	Nonlinear SEM
Mothers' monitoring knowledge	.71	.71	.71	.73	.82	.85
Harsh discipline	.59	.61	.66	.69	.66	.67
Authoritative parenting	.48	.54	.61	.63	.50	.60
Behavioral control	.51	.66	.59	.69	N/A	N/A
Family routines	.64	.66	.66	.69	.70	.72
Neighborhood problems	.89	.91	.91	.93	.91	.93
Neighborhood cohesion	.85	.86	.82	.83	.87	.87

Table 5: Reliabilities of the Major Variables for Latinos

Variable	Latinos					
	Time1		Time2		Time3	
	Alpha	Nonlinear SEM	Alpha	Nonlinear SEM	Alpha	Nonlinear SEM
Mothers' monitoring knowledge	.69	.71	.77	.80	.83	.85
Maternal punishment	.63	.63	.65	.65	.63	.65
Authoritative parenting	.55	.63	.60	.62	.61	.62
Behavioral control	.62	.73	.60	.67	N/A	N/A
Family routines	.69	.72	.64	.67	.71	.74
Neighborhood problems	.91	.93	.91	.93	.91	.93
Neighborhood cohesion	.86	.86	.86	.86	.87	.87

4.8 Reliabilities of the Measures for Adolescents' Adjustment Outcomes

Both open accessible and restricted datasets of the *Three-City Study* did not provide raw data for each item of internalizing and externalizing behavioral problems and school delinquency. Thus, the scale reliability was not allowed to be computed. Yet, the open accessible documents of the *Three-City Study* provided information on the Cronbach's Alphas for the scales of externalizing behavioral problems ($\alpha = .80$) and school delinquency ($\alpha = .67$) at Time 3 for all the adolescent participants. The documents did not provide information on the Cronbach's Alpha for the scale of the sum of internalizing behavioral problems at Time 3, but offered the Alphas for the subscales of internalizing behavioral problems at Time 3, which range from .71 (for somatic complaint) to .79 (for anxiety) for CBCL internalizing behavioral problem and from .76 (for withdrawn) to .85 (anxiety) for ABCL internalizing behavioral problem. The reliabilities of all the scales were considered adequate.

Chapter 5: Results

5.1 Descriptive Statistics of the Major Variables

The descriptive statistics of the major variables are shown in Table 6 and 7 for the African Americans and the Latinos, respectively. The mean and *SD* for internalizing behavior problems were not reported for both ethnicities because the present study used its clinical classification. For the African American adolescents, 78.4% were classified into the normal range, 9.3% were into the borderline range, and 12.3% were into the clinical range. For the Latino adolescents, 71.8% were classified into the normal range, 7.4% were into the borderline range, and 20.8% were into the clinical range. With the exception of the adolescents' outcome variables, all the variables were averaged across the three time points for further analyses. Two out of the three time points needed to be valid, non-missing to create the average score for all the variables. The percentages of missing data for all the average score of the focus variables ranged between 0% and 29.7% for the African Americans and 0% and 33.1% for the Latinos. Full Information Maximum Likelihood (FIML; Allison, 2001) estimation was used for all the following analyses in order to include as many participants as possible in the study.

5.2 Model Selection and the Specification of the Trajectory Groups for Mothers' Monitoring Knowledge

Muthén and Muthén (2002) suggest four criteria for choosing the number of latent trajectory classes. First is the Bayesian Information Criteria (BIC), a fit index used to compare relative model fit across models. BIC is defined as follows:

$$\text{BIC} = -2 \log L + p \ln(n), (1)$$

Where L is the loglikelihood value of the model, p is the number of parameters and n is the sample size. Lower BIC suggests better model fit. The second criterion is the Lo–Mendell–Rubin

Table 6: Means and *SDs* of the Major Variables for African Americans

Variable	Time1			Time2			Time3		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Mothers' monitoring knowledge	1.63	.39	318	1.60	.42	301	1.51	.50	318
Harsh Discipline	1.18	.86	312	1.21	.94	309	.78	.74	319
Authoritative parenting	2.60	.47	319	2.60	.45	303	2.56	.48	305
Behavioral Control	2.24	.58	319	2.22	.59	303	NA	NA	NA
Family routines	1.75	.65	319	1.62	.67	303	1.52	.70	296
Mothers' work hours/per week	16.85	19.13	299	19.50	19.08	298	19.83	18.42	311
Grandmothers' Childrearing Involvement	.52	.63	245	.39	.57	229	.32	.55	197
Neighborhood problems	.90	.56	319	.85	.57	303	.80	.59	304
Neighborhood cohesion	1.31	.86	315	1.32	.83	292	1.41	.87	288
Internalizing Behavior Problems	NA	NA	NA	NA	NA	NA	NA	NA	319
Externalizing Behavior Problems	NA	NA	NA	NA	NA	NA	-.14	.42	319
School Delinquency	NA	NA	NA	NA	NA	NA	-.22	.62	319

Table 7: Means and *SDs* of the Major Variables for Latinos

Variable	Time1			Time2			Time3		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Mothers' monitoring knowledge	1.62	.39	354	1.64	.40	327	1.56	.47	354
Harsh Discipline	1.12	.87	348	1.03	.81	328	.71	.67	354
Authoritative parenting	2.62	.47	354	2.55	.48	327	2.49	.57	343
Behavioral Control	1.89	.65	354	1.83	.62	327	NA	NA	NA
Family routines	1.81	.69	354	1.74	.65	327	1.57	.70	339
Mothers' work hours/per week	16.85	19.13	348	19.51	19.08	322	19.83	18.42	352
Grandmothers' Childrearing Involvement	.52	.63	241	.39	.57	228	.32	.55	210
Neighborhood problems	.78	.57	352	.73	.56	326	.69	.58	341
Neighborhood cohesion	1.34	.85	340	1.36	.87	312	1.57	.81	316
Internalizing Behavior Problems	NA	NA	NA	NA	NA	NA	NA	NA	354
Externalizing Behavior Problems	NA	NA	NA	NA	NA	NA	-.12	.41	354
School Delinquency	NA	NA	NA	NA	NA	NA	-.19	.65	354

likelihood ratio test (LMR-LRT). LMR-LRT is a likelihood ratio–based method for testing $k - 1$ classes against k classes. LMR-LRT does not require the premise that models are nested, which is a necessary condition in the classic chi-square testing. The application of LMR-LRT has been criticized (Jeffries, 2003), but it is still unclear about what factors affect its use in practice. The third criterion is entropy. Entropy is an index to summarize the posterior probability of membership in the most likely latent class for one (Collins & Lanza, 2010). Entropy ranges between 0 and 1. There is no clear criterion about to which extent entropy is high enough. The higher entropy indicates better latent class separation (Celeux & Soromenho, 1996). The fourth criterion is to consider the usefulness and interpretability of latent trajectory classes. Some considerations include whether there are distinct qualitative differences across identified latent classes.

Table 8 shows indexes of model fit for the African American mothers. For the African American mothers, only the indexes for 1-class, 2-class, and 3-class model were reported because models more than three classes did not converge, indicating poor model-fit. For the African American mothers, the values of BIC for 3-class model were smaller than the values of BIC for 1-class and 2-class model. Entropy of 3-class model ($=.78$) were acceptable. LMR-LRT was not reported since Mplus software cannot compute this index when RANDOM was chosen as the type of analysis. Additionally, the posterior probabilities (diagonal values) of 3-class model are all reasonably high, .90 for the smaller-size group, .77 for the middle-size group, and .93 for the larger-size group (Table 9; the proportions of class 1, class 2, and class3 $= .191, .732$, and $.075$). Although the entropy of 2-class model ($=.86$) was higher than the entropy of 2-class model, 3-class model was selected given that its value of BIC was smaller and

there were distinct qualitative differences across the identified three latent classes for the African American mothers.

Table 8: Summary of Information for Selecting Number of Trajectory Classes for African American Mothers

Number of Classes	Loglikelihood	AIC	BIC	Sample-size Adjusted BIC	Entropy
1	-454.32	920.65	943.22	924.19	N/A
2	-424.93	867.86	901.72	873.17	.86
3	-411.67	847.33	892.48	854.42	.78
4	Not well identified				

Table 9: Average Latent Class Probabilities for Most Likely Latent Class Membership (Row) by Latent Class (Column) for African American Mothers

	1	2	3
1	.769	.173	.057
2	.060	.934	.006
3	.057	.041	.902

Table 10 shows indexes of model fit for the Latino mothers. For the Latino mothers, the values of BIC for 2-class model were smaller than the values of BIC for 1-class and 3-class model. Like the African American mothers, LMR-LRT was not reported. Entropy of 2-class model (= .78) was acceptable for the Latino mothers. Additionally, the posterior probabilities (diagonal values) of 2-class model are all reasonably high, .84 for the smaller-size group and .95 for the larger-size group (see Table 11; the proportions of class 1 and class 2 = .112 and .887). Although the entropy of 3-class model (= 1.00) was higher than the entropy of 2-class model, two of the posterior probabilities of 3-class model are zero, indicating 3-class model does not fit the data of the Latino mothers. The combined information suggests good model fit for 2-class model for the Latino mothers.

Table 10: Summary of Information for Selecting Number of Trajectory Classes for Latino

Mothers

Number of Classes	Loglikelihood	AIC	BIC	Sample-size Adjusted BIC	Entropy
1	-507.75	1027.51	1050.72	1031.69	N/A
2	-478.86	975.72	1010.54	981.99	.78
3	-515.20	1054.40	1100.83	1062.76	1.00

Table 11: Average Latent Class Probabilities for Most Likely Latent Class Membership (Row)
by Latent Class (Column) for Latino Mothers

	1	2
1	.842	.158
2	.053	.947

5.3 Description of the Trajectories of Mothers' Monitoring

Figure 4 shows distinct patterns of the level of mothers' monitoring knowledge from age 10 to 20 for both the African American and Latino mothers (see Panel A and B for African Americans and Latinos, respectively). Among the African American mothers, 73.3% were classified into stable high monitoring group given that the level of mothers' monitoring started high and maintained high over time; 19.2% were classified into high declining monitoring group given that the level of mothers' monitoring started high but declined quickly over time; and 7.5% were classified into stable low monitoring group given that the level of mothers' monitoring starts low and maintained low over time. The estimated values of intercepts and slopes are shown in Table 12.

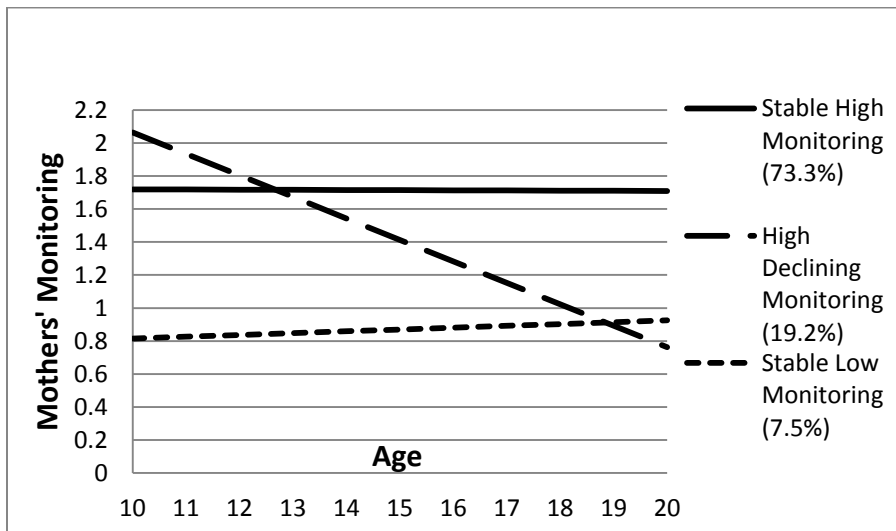
Table 12: Intercepts and Slopes of Identified Latent Classes of Mothers' Monitoring Knowledge

	Intercept		Slope	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
African Americans				
Stable High Monitoring Knowledge Class	1.719***	.037	.001	.001
High Declining Monitoring Knowledge Class	2.063***	.072	-.130***	.016
Stable Low Monitoring Knowledge Class	.815***	.154	.011	.026
Latinos				
Slowly Declining Monitoring Knowledge Class	1.832***	.155	-.028 ⁺	.015
Low Class Monitoring Knowledge Class	.853	.603	.054	.052

*** $p < .001$; ⁺ $p < .10$.

Among the Latino mothers, 88.8% were classified into slowly declining monitoring group given that the level of mothers' monitoring started high and declined slightly over time (the point estimate of slope = $-.028$, $p < .072$, in a marginal significance level). The rest 11.2% were classified into low monitoring group given that the level of mothers' monitoring started low and maintained low over time (the point estimate of slope = $.054$, $p < .293$, which was not significant). Together, there exist both similarities and differences in the trajectory patterns of mothers' monitoring between the African American and Latino mothers. Specifically, the majority of the mothers maintained high levels of monitoring, while very few mothers had low levels of monitoring over time in both ethnicities. However, the two ethnicities were also different in that about one-fifth of the African American mothers' monitoring declined quickly over time, while this group was not identified among the Latino mothers.

A



B

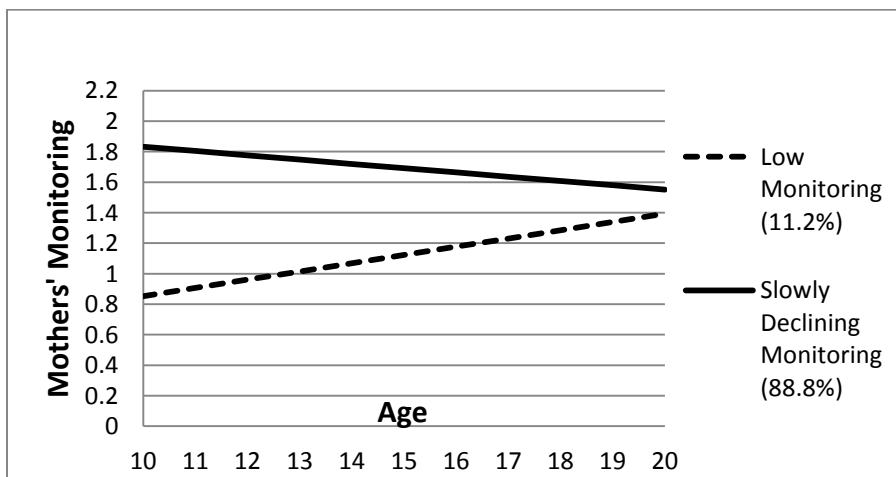


Figure 4: Trajectories of mothers' monitoring. A. Frequency for trajectories of mothers' monitoring for African Americans. B. Frequency for trajectories of mothers' monitoring for Latinos.

5.4 Correlates of Mothers' Monitoring Knowledge

For both ethnicities, logistic or multinomial logistic regression analyses were conducted to identify correlates of mothers' monitoring knowledge from the family environmental factors (i.e., harsh discipline, authoritative parenting, behavioral control, family routine, and mothers' working hours), neighborhood factors (i.e., neighborhood problems and neighborhood cohesion), adaptive cultural factor (i.e., grandmothers' childrearing involvement), and adolescent gender. For the African American families, since three trajectory groups of mothers' knowledge were identified, multinomial logistic regression analysis was utilized to examine relations between the likelihood of belonging to the stable high monitoring knowledge group versus the stable low group or the high declining group and average levels of all the above-mentioned factors simultaneously. For the Latino families, given that only two trajectory groups of mothers' knowledge were identified, logistic regression analysis was utilized to examine relations between the likelihood of belonging to the slowly declining monitoring knowledge class versus the low group and the average levels of all the above-mentioned factors simultaneously. For both ethnicities, mothers' education level and types of family arrangement were controlled. Only for the Latinos, mothers' acculturation was also controlled. The results are shown in Table 13.

Table 13: Logits, Standard Errors of Logits, and Odds Ratios From Logistic Regression for The Relations of Mothers' Monitoring Knowledge with Family Factors, Neighborhood Factors, Adaptive Cultural Factor, and Child Gender

Predictors	Latinos				African Americans							
	Slowly Declining Class (ref. Low Class)				Stable High Class (ref. High Declining Class)				Stable High Class (ref. Stable Low Class)			
	Logit	OR	95% CI	Wald Statistic	Logit	OR	95% CI	Wald Statistic	Logit	OR	95% CI	Wald Statistic
Family Factors												
Harsh Discipline	-.59*	.56	.33, .94	4.79*	-.55*	.58	.35, .95	4.66*	-.83**	.44	.26, .75	9.25**
Authoritative Parenting	.62	1.87	.72, 4.87	1.62	-.40	.67	.28, 1.63	.78	.50	1.66	.59, 4.67	.92
Behavioral Control	-.14	.87	.42, 1.79	.15	.27	1.32	.67, 2.48	.72	.71	2.02	.78, 5.29	2.09
Family Routine	.81*	2.25	1.17, 4.32	5.89*	.60*	1.82	1.05, 3.15	4.51*	.60	1.81	.96, 5.65	1.47
Mothers' Overtime Work	-.14	.87	.47, 1.63	.19	-.65	.52	.24, 1.15	2.63	-.02	.98	.24, 4.08	.00
Neighborhood Factors												
Neighborhood Problems	.03	1.03	.43, 2.48	.01	.30	1.35	.62, 2.95	.58	.59	1.80	.50, 6.49	.80
Neighborhood Cohesion	-.08	.93	.53, 1.62	.07	-.37	.69	.40, 1.20	1.73	.81*	2.27	1.02, 5.00	4.02*
Adaptive Cultural Factor												
Grandmothers' Childrearing Involvement	-.20	.82	.45, 1.50	.40	.67 ⁺	1.22	.88, 4.27	2.73 ⁺	.09	1.10	.45, 2.67	.05
Adolescent Gender (ref. male)	.26	1.30	.66, 2.57	.58	.52 ⁺	1.68	.93, 3.05	2.95 ⁺	.48	1.62	.73, 3.61	1.39

Note. 1. Mothers' acculturation and education and household arrangement were controlled for the Latinos; mothers' education and family arrangement were controlled for the African Americans; and the estimates of the controlled variables were not shown in the table. 2. * $p < .05$; ** $p < .01$; ⁺ $p < .10$.

5.4.1 Family Environment and Trajectories of Mothers' Monitoring Knowledge

For the African American families, the results indicate that average high levels of harsh discipline significantly predicted less likelihood of belonging to the stable high monitoring knowledge group versus the stable low group or the high declining group. Specifically, with each one unit increase in harsh discipline, the odds of the stable high monitoring knowledge versus the stable low group decreased by 56% ($OR = .44, p = .003$) and the odds of the stable high monitoring knowledge versus the high declining group decreased by 42% ($OR = .58, p = .031$). These results suggest that harsh discipline was an impediment to mothers' monitoring knowledge over time. In contrast, another family factor—family routine—predicted higher likelihood of belonging to the stable high monitoring knowledge group versus the high declining group. Specifically, the odd of the stable high monitoring knowledge versus the high declining monitoring knowledge increased by 82% with each one unit increase in family routine ($OR = 1.82, p = .034$). This result suggests that family routine was a facilitator to the African American mothers' monitoring knowledge over time. Authoritative parenting, behavioral control, and mothers' overtime work were not associated with the likelihood of belonging to the stable high monitoring knowledge group versus the stable low group or the high declining group, suggesting that all the above factors were neither facilitators nor impediments to mothers' monitoring knowledge.

A number of findings on the Latino families paralleled to the findings on the African American families. First, earlier harsh discipline was also an impediment to the Latino mothers' monitoring knowledge over time. Specifically, the odds of the slowly declining monitoring knowledge versus the stable low group decreased by 40% with each one unit increase in harsh discipline ($OR = .56, p = .029$), indicating that the average high levels of harsh discipline

predicted less likelihood of belonging to the slowly declining monitoring knowledge group versus the low group. Second, family routine was also a facilitator to the Latino mothers' monitoring. Specifically, the odds of the slowly declining monitoring knowledge versus the stable low group increased by 125% with each one unit increase in family routines, indicating that the average high levels of family routines predicted higher likelihood of belonging to the slowly declining monitoring knowledge group versus the low group. In addition, similar to the African American families, authoritative parenting, behavioral control, and mothers' overtime work were also not significantly associated with the likelihood of belonging to the slowly declining monitoring knowledge group versus the low group for the Latino families. Accordingly, the three factors were neither facilitators nor impediments for the Latino families.

A further analysis was conducted to test whether the effects of mothers' overtime work on their monitoring knowledge over time were moderated by grandmothers' childrearing involvement. This logistic/multiple logistic regression model included all the predictors and controlled variables in Table 13 as well as the interaction of mothers' work hours and grandmothers' childrearing involvement for both ethnicities. For both ethnicities, the interaction of mothers' work hours and grandmothers' childrearing involvement was not significant. For the African American families, *OR* of the stable high monitoring knowledge class versus the low stable class = .67, 95% CI of *OR* [.04, 10.87], $p = .775$; and *OR* of the stable high monitoring knowledge class versus the sharply declining class = .69, 95% CI of *OR* [.06, 7.69], $p = .764$. For the Latino families, *OR* of the slowly declining monitoring knowledge class versus the low class = .99, 95% CI of *OR* [.98, 1.00], $p = .162$. To evaluate whether the interactions of the mothers' overtime work variable and grandmothers' childrearing involvement adds predictability over and above the main effects, further chi-square difference tests were conducted between the relax

model (in which interactions were freely estimated) and the constrained model (in which interactions were constrained to be zero). Further chi-square difference test indicates that the interaction of mothers' overtime work and grandmothers' childrearing involvement was not significant for either the African Americans ($\Delta\chi^2(\Delta df=2) = .17, p = .919$) or the Latinos ($\Delta\chi^2(\Delta df=1) = 2.55, p = .110$). This suggests that the effects of mothers' overtime work on their monitoring knowledge over time did not vary with average levels of grandmothers' childrearing involvement over time for both ethnicities.

5.4.2 Neighborhood Context and Trajectories of Mothers' Monitoring

For the African American families, the results indicate that average high levels of neighborhood cohesion significantly predicted more likelihood of belonging to the stable high monitoring knowledge group versus the stable low group. The odds of the stable high monitoring knowledge versus the stable low group increase by 127% with each one unit increase in neighborhood cohesion ($OR = 2.27, p = .046$). In contrast, the likelihood of belonging to the stable high monitoring knowledge versus the high declining group was not predicted by neighborhood context. The present study did not find trajectory groups of mothers' monitoring knowledge were related to average levels of neighborhood problems. Together, these results suggest that average high levels of neighborhood cohesion facilitated mothers' monitoring knowledge over time, but the average levels of neighborhood problems were neither facilitators nor impediments. For the Latino families, the likelihood of belonging to the slowly declining monitoring knowledge group versus the low group was not significantly associated with any neighborhood context factors. This suggests that neighborhood context did not predict the levels of mothers' monitoring knowledge over time for the Latino families.

5.4.3 Adolescent Gender and Trajectories of Mothers' Monitoring

For the African American mothers, the results indicate that the likelihood of belonging to the stable high monitoring knowledge group versus the low stable group was not significantly predicted by adolescent gender ($OR = 1.62, p = .238$). In contrast, the likelihood of belonging to the stable high monitoring knowledge group versus the sharply declining group was predicted by adolescent gender. Converting logit value of adolescent gender (.52) into odds ratio (1.68) showed that being a girl increases the odds of having mothers with the stable high monitoring knowledge versus the sharply declining knowledge by 68% ($p = .086$) with a marginal significance level. In other words, the African American mothers who rear boys were more likely to experience high declining monitoring knowledge over time. These findings suggest that African American mothers may not be faced with challenges in gaining information about their sons in early adolescence but are less likely to effectively supervise them between middle and late adolescence. In contrast, for the Latino mothers, the likelihood of belonging to the slowly declining monitoring knowledge group versus the low group was not significantly predicted by adolescent gender ($OR = 1.30, p = .447$). The findings suggest that compared to those rearing boys, the Latino mothers rearing girls experienced similar levels of monitoring knowledge over time.

A further analysis was conducted to test whether the relation between child gender and mothers' monitoring knowledge over time were moderated by types of household arrangement with male adult (i.e., comparing the mother living with the child's biological father or male adults versus the single lone mother). This logistic/multiple logistic regression model included all the predictors and controlled variables shown in Table 13 and the interaction of adolescent gender and the household arrangement with male adult for both ethnicities. The only difference

is that the family arrangement was replaced by the household arrangement with male coded with two dummy variables, i.e., biological father (versus reference group—lone single mother) and male adult (versus reference group— lone single mother). As shown in Table 14 and 15, the interaction of adolescent gender and family arrangements was not significant for both ethnicities. Further chi-square difference test indicates that the interaction of adolescent gender and family arrangements was not significant for either the African Americans ($\Delta\chi^2(\Delta df=4) = .72, p = .949$) or the Latinos ($\Delta\chi^2(\Delta df=2) = 2.39, p = .303$). The overall findings suggests that mothers' monitoring knowledge about girls and boys were not different between the household headed by the single lone mother, the mother living with the child's biological father or male adults, for both ethnicities.

5.4.4 Adaptive Culture and Trajectories of Mothers' Monitoring Knowledge

For the African American mothers, the results indicate that the likelihood of belonging to the stable high monitoring knowledge group versus the low stable group was not significantly predicted by average levels of grandmothers' childrearing involvement over time (*OR* of the stable high monitoring knowledge class versus the low stable class = 1.64, 95% *CI* of *OR* [.58, 4.55], $p = .354$). Yet, the likelihood of belonging to the stable high monitoring knowledge group versus the declining group marginally and significantly increased by 22% with each one unit increase in average levels of grandmothers' childrearing involvement ($OR = 1.22, p = .098$). This suggests that among the mothers having initially high levels of monitoring knowledge, some of them (those who were classified into the high declining group) were more likely to experience a sharp decline in monitoring knowledge when they received low levels of childrearing support from the grandmothers. For the Latino mothers, the likelihood of belonging to the slowly declining monitoring knowledge group versus the low group was not significantly predicted by

Table 14: Hierarchical Multinomial Logistic Regression Assessing Interaction Between Adolescent Gender and Types of Family Arrangements for African Americans

Models	Predictors	Stable High Class (ref. High Declining Class)			Stable High Class (ref. Stable Low Class)			$\Delta\chi^2(\Delta df=4)$
		Logit	Odds Ratio	95% CI	Logit	Odds Ratio	95% CI	
Step1	Gender (ref. Male)	.53 ⁺	1.70	.93, 3.08	.56	1.76	.78, 3.94	
	Biological Father (BF) (ref. Lone Single Mother)	.07	1.07	.39, 2.97	.35	1.42	.27, 7.52	
	Male Adult (MA) (ref. Lone Single Mother)	.13	1.05	.56, 2.31	.89	2.43	.89, 7.25	
Step 2	Gender \times BF	-.84	.43	.05, 3.70	-.09	.91	.03, 29.41	.72
	Gender \times MA	-.22	.80	.19, 3.36	-.37	.69	.09, 5.52	

Note. Family factors, neighborhood factors, grandmothers' childrearing involvement, and mothers' education were controlled for each model but the estimated logits and odds ratios were not reported in this table.

Table 15: Hierarchical Multinomial Logistic Regression Assessing Interaction between Adolescent Gender and Types of Family Arrangements Involvement for Latinos

Models	Predictors	Slowly Declining Class (ref. Low Class)			$\Delta\chi^2(\Delta df=2)$
		Logit	Odds Ratio	95% CI	
Step1	Gender (ref. Male)	.22	1.25	.63, 2.48	
	Biological Father (BF) (ref. Lone Single Mother)	-.02	.98	.40, 2.39	
	Male Adult (MA) (ref. Lone Single Mother)	-.26	.77	.35, 1.69	
Step 2	Gender \times BF	1.47	4.34	.70, 26.95	2.39
	Gender \times MA	.25	1.29	.36, 4.61	

Note. Family factors, neighborhood factors, grandmothers' childrearing involvement, and mothers' education and acculturation were controlled for each model but the estimated logits and odds ratios were not reported in this table.

average levels of grandmothers' childrearing involvement ($OR = .82, p = .527$). The overall findings suggest that the average levels of grandmothers' childrearing involvement was neither a facilitator nor an impediment to mothers' monitoring knowledge over time for the Latino families, but was a facilitator for the African American families.

5.5 Trajectories of Mothers' Monitoring Knowledge and Adolescent Adjustment Outcomes

For both ethnicities, ordinary least square (OLS) regression analyses were conducted to test relations between trajectory types of mothers' monitoring knowledge and adolescents' externalizing behavior problems and school delinquency (see Table 16); and ordinal logistic regression analyses were conducted to test relations between trajectory types of mothers' monitoring knowledge and adolescents' internalizing behavior problems (see Table 17). One similar result was found for both groups. Compared to those whose mothers had high levels of monitoring knowledge over time (i.e., belonging to the stable high or slowly declining class), the adolescents whose mothers had low levels of monitoring knowledge (i.e., belonging to the high declining or the low class) were more likely to display externalizing behavioral problems in late adolescence for both the African American families ($\beta s = .17$ and $.17, ps = .002$ and $.001$, for the high declining class versus the stable high class and the stable low class versus the stable high class, respectively) and Latino families ($\beta = .15, p < .001$). This suggests that high levels of mothers' monitoring knowledge prevented adolescents from externalizing problems.

Ethnic differences were also found. First, high levels of mothers' monitoring knowledge predicted lower levels of internalizing problems in late adolescence for the African American adolescents, but not for the Latino adolescents. Specifically, among the African Americans, converting the logit ($=1.04$) into the odds ratio ($=2.82$) for the stable low class versus the stable high class indicates that the odds of displaying higher levels of internalizing behavioral problems

versus lower levels in late adolescence were 2.82 times greater for the adolescents whose mothers had stable low levels of monitoring knowledge than those whose mothers had stable high levels of monitoring knowledge over time (see Table 17). In contrast, the trajectory type of mothers' monitoring knowledge was not significantly related to the Latino adolescents' internalizing behavioral problems. Together, this suggests that high levels of mothers' monitoring knowledge prevented adolescents from internalizing behavioral problems in late adolescence only in the African American families, but not in the Latino families.

Second, high levels of mothers' monitoring knowledge predicted less school delinquent behavior in late adolescence for the Latino adolescents, but not for the African American adolescents. As shown in Table 16, among the Latinos, compared to those whose mothers had high levels of monitoring knowledge over time (i.e., belonging to the slowly declining class), the adolescents whose mothers had low levels of monitoring knowledge (i.e., belonging to the low class) had more school delinquent behavior ($\beta = .10, p = .074$) in late adolescence with a marginal significance level. In contrast, the trajectory type of mothers' monitoring knowledge was not significantly related to the African American adolescents' delinquent behavior. Together, this suggests that high levels of mothers' monitoring knowledge prevented adolescents from school delinquent behavior in late adolescence only in the Latino families, but not in the African American families.

Table 16: Regressing Adolescents' Externalizing Behavior Problems and School Delinquency on the Trajectory Groups of Mothers' Monitoring Knowledge

	Externalizing Behavior Problems				School Delinquency			
	<i>B</i>	<i>SE</i>	β	R^2	<i>B</i>	<i>SE</i>	β	R^2
African Americans								
High Declining Class (ref. Stable High Class)	.18**	.06	.17	.10	.11	.10	.07	.05
Stable Low Class (ref. Stable High Class)	.28***	.09	.17		.06	.17	.02	
Latinos								
Low Class (ref. Slowly Declining Class)	.20***	.07	.15	.06	.23 ⁺	.14	.10	.05

Note. 1. Adolescents' gender, mothers' educational level, and family arrangement types were controlled for each outcome variable; only for the Latinos, mothers' acculturation was also controlled. 2. ** $p < .01$; *** $p < .001$; ⁺ $p < .10$.

Table 17: Regressing Adolescents' Internalizing Behavior Problems on the Trajectory Groups of Mothers' Monitoring Knowledge

	Internalizing Behavior Problems			
	Logit	Odds Ratio	95% CI	Wald Statistic
African Americans				
High Declining Class (ref. Stable High Class)	.04	1.04	.55, 1.97	.02
Stable Low Class (ref. Stable High Class)	1.04*	2.82	1.23, 6.48	5.95*
Latinos				
Low Class (ref. Slowly Declining Class)	.30	1.34	.69, 2.61	.75

Note. 1. Adolescents' gender, mothers' educational level, and family arrangement types were controlled for each outcome variable; only for the Latinos, mothers' acculturation was also controlled. 2. * $p < .05$.

Chapter 6: Discussion

The present study shed light on mothers' monitoring knowledge in terms of its trajectories, facilitators and impediments, and implications for adolescents' developmental outcomes among low-income African American and Latino families. In both the low-income African American and Latino families in this study, the majority of mothers maintain monitoring knowledge with high levels across the adolescent years. In examining family environment and mothers' monitoring knowledge, the present study identified family routine as a common facilitator and harsh discipline as a common impediment to mothers' monitoring knowledge for both ethnic groups. Some unique facilitators were identified only in the low-income African American families, i.e., grandmothers' childrearing involvement and neighborhood cohesion. Adolescent gender difference in mothers' monitoring knowledge was also only found in African American families. Specifically, the African American mothers who rear boys were more likely to experience a sharp decline in monitoring knowledge than those who rear girls. Regarding implication of mothers' monitoring knowledge, the present finding suggests that stable high or slowly declining monitoring knowledge across the adolescent years prevents adolescents from maladjustment, particularly in terms of internalizing behavior adjustment for the African American adolescents and externalizing behavior adjustment for the adolescents in both groups. The findings, implications, and limitations are discussed below.

6.1 Trajectories of Mothers' Monitoring Knowledge

My findings indicate that there were variations in patterns of trajectories of the primary caregivers' (i.e., mothers') monitoring knowledge in the low-income African American and Latino families in this study, with the majority of the mothers having high levels of monitoring knowledge over time (stable high for the African American mothers and slowly declining for the

Latino mothers), while a small portion of the mothers had stable low or declining levels in both groups. High levels of mothers' monitoring knowledge reflect their active engagement in tracking of or children's willingness to disclose whereabouts and daily activities. Accordingly, most of the low-income African American and Latino mothers may maintain high levels of control over their children and solicit whereabouts and activities from them. Another possible explanation is that the parent-child dyad is characterized by high levels of trust and closeness so that most children are willing to actively disclose their daily activities. Regardless of either possibility, my findings suggest that parent-child connectedness and parental authority are probably highly valued in these low-income households. The family dynamic that the present study identifies is inconsistent with the previous findings, which suggest that although there are cross-ethnic variations in the onset of developing autonomy, parents tend to gradually release their control and children are provided with more autonomy as they enter into middle or late adolescence across both groups (see the review of Smetana, 2002). This contradiction may be explained by both the cultural values and social context of low-income African American and Latino families. Both African American and Latino families emphasize the importance of parent-child connectedness and parental authority (Harwood et al., 2002; Yasui & Dishion, 2007). Thus, although developing autonomy is an universal developmental need for adolescents, parents' high control and monitoring as well as children's voluntary disclosure can be very common in adolescence and even as children enter into late adolescence in both the low-income African American and Latino families.

This contradiction may also be explained by the social context of the African American and Latino families in the study. In the present sample, all the African American and Latino families were classified as low-income households and located in the low-income neighborhoods

(i.e., 20% households in the neighborhood lived below the federal poverty threshold in 1990). Low-income neighborhoods are in general characterized as having a lot of risk factors, such as gun use, drug and alcohol abuse, and gang activity. In order to prevent children from those risk factors, these parents may make great efforts to gain monitoring knowledge either through active tracking of their children's behavior, or being consistently informed by the children. In line with this view, the previous findings on parental monitoring of low-income African and European American families found that over half of the parents maintained stable high or slightly declining levels of monitoring knowledge over time (Laird et al., 2008; Spano et al., 2012). Extending the studies of Laird et al. and Spano et al., the present findings suggest that the low-income Latino mothers may also rely on high levels of monitoring knowledge to protect their children from the risk factors in relation to low-income neighborhoods during the overall adolescent years. In sum, maintaining intense monitoring knowledge may be a strategy to buffer negative impact of the social context surrounding low-income families across ethnic groups.

Since the most of the African American and Latino mothers in the study were single mothers, maintaining intense monitoring knowledge among the majority of them may also be a strategy to overcome barriers to supervising children's behavior that are due to multiple and high density of time obligations. Low-income single mothers tend to take on multiple responsibilities, including full-time caregiving and full-time employment (Roy, Tubbs, & Burton, 2004). Furthermore, Roy et al. found that their full-time employment is often composed of multiple part-time jobs that require transitioning from one work place to another. The findings of Roy et al. suggest that intense obligations compress the low-income single mothers' available time to get along with and physically track of their children. Acknowledging the limited time in caring

and supervising children, the mothers in the current sample may make great efforts to improve the quality of monitoring in order to efficiently protect their children from behavioral problems. Together, to clarify whether the present findings are attributed to the mothers' cultural values, social context and position, or the synergic effects of all the factors, more efforts are needed to examine patterns of trajectories of parents' monitoring knowledge across diverse ethnic, socioeconomic, and marriage status groups.

6.2 Family Environmental Factors and Mothers' Monitoring Knowledge

The present study identified one common facilitator and one common impediment to mothers' monitoring knowledge from family environmental factors in both the low-income African American and Latino families. In terms of the specific common facilitator, average high levels of family routine during adolescence were identified as predicting high likelihood of slowly declining levels of mothers' monitoring knowledge for the Latino families and stable high levels of knowledge for the African American families. Families with high levels of family routine are characterized by a set of family regular activities arranged by parents for the purposes of creating common family time, including such as mealtimes, homework times, and the times for playing and talking (Jensen et al., 1983). A lot of common family time probably provide both the mother and the child with many opportunities to discuss the child's whereabouts and activities, and thus facilitate the mother to gain information about their children. In other words, high levels of family routine may shape positive dynamics of mother-child communication in which both the mother and the child can discuss the child's daily life.

The positive implication of family routine for formation of mothers' long-term monitoring knowledge also affirms the general view on the cultural traditions in the African American and Latino families. Both ethnicities have been described as valuing the importance of

family cohesion (e.g., Yasui & Dishion, 2007; Harwood et al., 2002). Family routine possibly functions as an important venue through which family solidarity and cohesion is strengthened because this routine creates opportunities for family members to engage in common activities. Given that family cohesion is highly valued in the culture, the African American and Latino adolescents in the study were likely to appreciate family routine, and thus used this opportunity to discuss their daily issues with their mothers. These adolescents may also interpret routine as conveying positive meaning, such as mothers' care and involvement, which possibly enhance mother-child trust and the children's voluntary disclosure.

In addition to family environment, this study also shed light on the long-term relations between parenting styles and tactics and mothers' monitoring knowledge in the low-income African American and Latino families. This study did not assume mothers' parenting styles as static typologies and classified mothers into specific categories such as authoritative versus authoritarian, which is the measurement approach conducted by Steinberg and his colleagues (Steinber, Lamborn, Dornbusch, & Darling, 1992; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). Rather, this study assumed that mothers could mix their styles of parenting, which is based on the recent view of Tamis-LeMonda et al. (2008) suggesting that the nature of parenting practices is fluid rather than static typology. Adopting this approach, the present findings present how the relative degrees to which the low-income parents in both ethnic groups exercise each type of parenting styles and/or tactics (i.e., authoritative parenting, behavior control, and harsh discipline) predict their monitoring knowledge in a long term. In consistent to the research hypotheses, the study did not identify authoritative parenting and behavioral control as facilitators to mothers' monitoring knowledge for either the African American or Latino families. Although both authoritative parenting and behavioral control can convey mothers' care

and warmth as associated with parent-child closeness (Jackson-Newsom et al., 2008; Westbrook & Harden, 2010), their links to parent-child closeness may not be as strong as other family environmental factors—such as family routine—that more directly reflects the efforts that parents make to enhance venues of parent-child communication and consolidate parent-child closeness. This suggests that mothers' monitoring knowledge is more likely to be fostered through the explicit establishment of positive family dynamics.

By contrast, mothers' harsh discipline was identified as one common impediment to their monitoring knowledge in both the low-income African American and Latino families in the study. This finding is not in line with the study hypothesis inferred from the previous research. The previous research suggests that harsh discipline is likely interpreted as a positive connotation representing parents' care and warmth among African American and Latino children (e.g., Hill et al., 2003; Steele et al., 2005). Furthermore, coercive control-oriented parenting tactics, such as harsh discipline, has been found as protection against the negative influence of the risk factors in low-income neighborhoods on children (Bradley et al., 2001). Thus, those children living in low-income families may be more likely to perceive parents' care and warmth from this kind of parenting behavior. Based on the above view, mothers' harsh discipline is less likely to lead to mother-child alienation and may even predict mother-child closeness in both the low-income African American and Latino families. Given that mothers are more likely to gain monitoring knowledge in a context full of mother-child closeness (Blocklin et al., 2011; Padilla-Walker et al., 2011), mothers' harsh discipline is probably able to facilitate mothers to gain information about their children's whereabouts and activities.

The present finding may be explained by the method of measuring mothers' monitoring knowledge. This study assesses mothers' monitoring knowledge by adolescent report.

Accordingly, from the eyes of both the African American and Latino adolescents in the study, mothers' harsh discipline may be perceived as conveying negative messages, such as mothers' hostility and anger. When those adolescents feel that the relation with the mother is lack of closeness and love, they tend not to allow their mothers to gain information about their daily activities.

Interpreting the finding also needs to take two points into consideration. First, the finding was only based on the three items from the measure of mothers' harsh discipline, including the items assessing whether the mother scolded, threatened to spank, and punish her child if the child didn't behave. Caution needs to be kept in mind regarding whether the few items can really capture a comprehensive construct of harsh discipline and unpack the relations between mothers' harsh discipline and monitoring knowledge. Second, the present sample was primarily comprised of low-income single mothers. Thus, the present finding on the negative link between mothers' harsh discipline and monitoring knowledge can only be generalized to a particular set of African American and Latino families. The finding, however, cannot present the complex picture of mothers' harsh discipline and monitoring knowledge across a variety of family composition (e.g., two-parent family) and socioeconomic context (e.g., middle or upper class) for African American and Latino families.

Indicators of both parenting and family relation were found to be associated with mothers' long-term monitoring knowledge. Yet, another family environmental factor—mothers' overtime work—was neither a facilitator nor an impediment to their monitoring knowledge in both the low-income African American and Latino families. This finding is inconsistent with the finding of the previous qualitative study indicating that both mothers and fathers perceived long work hours as a barrier hampering them from understanding their children's daily activities (Belle &

Philips, 2010). One possible reason behind this contradiction may be due to distinction between parents' perception and real situation. Although parents tend to perceive overtime work as an obstacle for supervising their children, it does not necessarily mean that they inevitably fail to gain information about the children's daily life. Being aware of this parenting difficulty, the African American and Latino mothers in the study may make great efforts to overcome through establishing well-organized family routines as previously discussed in this chapter. For example, these mothers may arrange mealtimes to enhance mother-child communication and take this advantage of understanding the child's school life. The above-mentioned possibility may be clarified by further research investigating mothers' strategies for coping with impact of overtime work on monitoring.

6.3 Neighborhood Context and Mothers' Monitoring Knowledge

The present study found ethnic difference in whether long-term levels of mother's monitoring knowledge are associated with neighborhood context. In the Latino families, the long-term trajectory patterns of mothers' monitoring knowledge were not linked either with average levels of neighborhood problems or with average levels of neighborhood cohesion. In contrast, in the African American families, the long-term trajectory patterns of mothers' monitoring knowledge were associated with average levels of neighborhood cohesion. The above distinction is in line with the study hypothesis that consistently disadvantaged neighborhood conditions in adolescence are less likely to be linked to low levels of mothers' monitoring knowledge over time for the Latino families than for the African American families. The previous research has pointed that compared to the family environment of African Americans, Latinos' family environment is less likely to be impacted by neighborhood context because Latinos have stronger family cohesion, including strong connections between siblings (Pachter et

al., 2006). Pachter et al. assert that the strong family cohesion plays as an important firewall that blocks risks from low-income neighborhoods and reduces their impacts on positive family dynamics of Latinos. Another possible reason is that African American families place great emphasis on communalism (i.e., cooperation among community members) and thus tend to view fictive kin (e.g., community members) as a part of their family system and feel obligated to provide childrearing support for fictive kin (McAdoo, 1981; Yasui & Dishion, 2007). According to the discussion of Yasui and Dishion (2007), although Latino families also value cooperation within group, they primarily rely on family members rather than fictive kin in childrearing support. On the one hand, Latino families may lack the advantage of having close-knit neighbors to help with child-rearing (e.g., monitoring each other's children). On the other hand, however, the family dynamics of Latinos is less susceptible to the impact of neighborhood condition. Based on either of the above possibilities, neighborhood conditions may have little to do with indicators of good quality of family dynamics, such as slowly declining mothers' monitoring knowledge, in the Latino families in the study.

In contrast, the African American mothers in the study were more likely to gain information about their children in a stable low level if living in low quality neighborhoods, specifically characterized as low cohesion. In this study, neighborhood cohesion was assessed with the degrees to which mothers perceived their neighborhood as close-knit and a good place to rear children as well as neighbors are willing to help each other and can be trusted. The previous discussion in this chapter has pointed to that African American families value the importance of mutual support among community members. Thus, highly cohesive neighborhood may provide the low-income African American mothers in this study with the advantage to get access to neighbors' assistance in child-rearing, such as supervising their children or gathering

the information about the children. However, since neighborhood connection is highly valued, the African American mothers' efficacy in gaining monitoring knowledge is more vulnerable to the impact of disadvantaged neighborhood condition. Also, the previous discussion in this chapter indicates that African American families lack stronger family cohesion as a firewall blocking risks associated with low quality neighborhoods compared to Latino families. In sum, both the neighborhood and family conditions provide possible explanations for the link between low levels of monitoring knowledge and low neighborhood cohesion for the low-income African American mothers in the study.

Although the average levels of neighborhood cohesion account for the likelihood of stable high versus stable low monitoring knowledge, those levels cannot distinguish the likelihood of experiencing stable high versus high declining monitoring knowledge for the African American mothers. In contrast, the likelihood of stable high versus high declining knowledge is primarily explained by the within-familial factors, including harsh discipline, family routine, grandmothers' childrearing support, and child gender. In addition, further examination of the average levels of neighborhood cohesion across the three trajectory groups indicated that the mothers with high declining monitoring knowledge ($M = 1.48$) and those with stable high knowledge ($M = 1.33$) lived in the communities with similarly high levels of neighborhood cohesion ($t(289) = 1.66, p < .293^2$), while those with stable low knowledge had lowest levels of neighborhood cohesion ($M = 1.07$).

The possible explanation behind the above findings is that the long-term levels of African American mothers' monitoring knowledge may be determined by two stages—with neighborhood condition being the first determinant and family environment the next determinant. When living in the neighborhoods are characterized as low cohesion, such as with lack of mutual

² The p-value was adjusted based on pairwise multiple comparisons with Bonferroni adjustment.

support in supervising children's behavior, the African American mothers tend to gain stable low levels of information about their children over time and within-familial factors have very little to do with formation of mothers' monitoring knowledge (with the exception of harsh discipline). Next, among the mothers living in highly cohesive neighborhood and gaining high levels of information about their children in early adolescence, within-familial factors play the major role in determining why some mothers maintain stable high knowledge versus some starts high levels but experience a sharp decline across adolescent years. This two-stage process implies that within-family factors become influential for the formation of mothers' monitoring knowledge specifically only when the neighborhood quality turns good. This process again possibly points to the quiet susceptibility of African Americans' family dynamics is to the influence of neighborhoods, specifically those characterized as disadvantaged.

6.4 Gender and Mothers' Monitoring Knowledge

My findings indicate ethnic difference in relations between mothers' monitoring knowledge and child gender. In the African American families, mothers' monitoring knowledge varied according to child gender. Specifically, African American mothers who reared sons were more likely to be classified in the group of sharp decline in monitoring knowledge rather than stable high monitoring knowledge. In contrast to the findings of the African Americans, the present findings of the Latino families indicate that mothers' monitoring knowledge did not vary according to child gender, with the majority of both Latino boys and girls with mothers having slowly declining monitoring knowledge (88.6% and 88.8%, respectively). This may be explained by ethnic difference in the mothers' fear of gendered risk behaviors. Both the African American and Latina girls in the study were at even higher risk of teenage pregnancy, given that their proportion of having ever had sexual intercourse (63% and 55% for the African American and

the Latina girls, respectively) is above the national average (47.4%)(Centers for Disease Control and Prevention, n.d.). The previous research has pointed that parents across races and SES in general are in fear of their daughter's pregnancy and thus monitor girls closely (Jones-Sanpei et al., 2009). More specifically, the research on the low-income African American and Latino single mothers indicates that the majority hold conservative attitudes toward teenage sexual activities for their daughters (Kotchick, Dorsey, Miller, & Forehand, 1999). For example, daughters should not have sex until she is married and teenage pregnancy will devastate their daughters' future education and career. Thus, both the African American and Latino mothers in the study may actively gain information about their daughters' whereabouts and activities in order to prevent the daughters from engagement in sexual activities and decrease their risk of pregnancy.

Yet, different from the African American mothers, the Latino mothers may have dual fears. That is, they may not only be in fear of the daughter's pregnancy but also of the son's engagement in externalizing behavior problems, and thus may make great efforts in supervising their sons and daughters to a similar level. Indeed, further examination of gender difference in externalizing behavior problems indicates the degrees of such problems for the Latino boys were higher than the degrees for their female counterparts across adolescent years (measured at all three waves)³. Given that the Latino boys displayed higher levels of tendency to engage in externalizing behavior problems than the Latina girls since very early stage of adolescence, their mothers may tend to be protective of the sons in order to decrease such gendered risk behaviors specifically prevalent among their sons. Furthermore, the following examination of interaction

³ For the Latino adolescents, a series of t-tests indicated that the Latino boys displayed higher levels of externalizing behavior problems than their female counterparts at all the waves, with *Ms* = -.07 and -.16 (at Time1), -.11 and -.19 (at Time 2), and -.05 and -.19 (at Time 3) for the boys and girls, respectively; and *ts*(352) = 2.35, 2.30, and 3.21, *ps* < .019, .022, and .001 at Time 1, Time2, and Time3, respectively.

between child gender and the household arrangement with male adult indicates that the Latino lone single mothers' monitoring knowledge about boys and girls were at a similar level.

Theoretically, lone single mothers may be faced with more barriers in understanding free-time activities of their sons than of their daughters due to the opposite-sex parent-child interaction and the lack of childrearing assistance from male adults (Vieno et al., 2009). Inconsistent with the previous perspective, the present findings suggest the possibility that the Latino lone single mothers may encounter no barriers or contribute all their energy in supervising their sons because of no male adults in the household and their strong desires to protect their sons from externalizing behavior problems.

In contrast, although the African American boys displayed more externalizing behavior problems than their female counterparts in the late adolescence (measured at Time 3), no gender difference was found in early and middle adolescence (aged from 10-16, measured at Time 1 and 2)⁴. Accordingly, the African American mothers may not think it is necessary to be protective of sons as they are of daughters, because at least in early and middle adolescence, their sons were not at higher risk of engaging in externalizing behavior problems, which is in general viewed as common risk behaviors among adolescent boys (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). Moreover, it is noteworthy that the present findings do not suggest African American mothers living with their spouse or other male adults (e.g., a male partner or grown male child) gain more information about their sons than do the African American lone single mothers. Based on the previous research on parental monitoring (Vieno et al., 2009), male adult figures may be able to assist the African American mothers in gaining supplement information about their sons

⁴ For the African American adolescents, a series of t-tests indicated that the African American boys displayed higher levels of externalizing behavior problems than their female counterparts only at Time 3, with $M_s = -.03$ and $-.22$ for the boys and girls, respectively; and $t(317) = 4.03, p < .001$. The African American boys and girls were not different in the levels at Time 1 and Time 2, with $M_s = -.04$ and $-.10$ (Time 1) and $-.05$ and $-.09$ (Time 2) for the boys and girls, respectively; and $t_s(317) = 1.61$ and $.81, p_s = .109$ and $.420$ at Time 1 and Time2, respectively.

due to being faced with fewer obstacles discussing and understanding same-sex children's activities. Yet, given that the gendered risk (i.e., the risk of teenage pregnancy) among the African American girls are more salient, the African American mothers may still concentrate energy on monitoring their daughters and not deliberately rely on male adults to gain supplement information about their sons. The above-mentioned possibilities about the mothers' gendered strategies for monitoring for both ethnicities may be clarified by further qualitative research investigating mothers' attitudes toward monitoring sons versus daughters.

6.5 Adaptive Culture and Mothers' Monitoring Knowledge

The present study focused on the long-term association between mothers' monitoring knowledge and one specific adaptive culture factor—grandmothers' childrearing involvement. Grandmothers' assistance in childrearing is one key indicator of strong family cohesion, which is nested within cultural traditions of both African American and Latino families. Childrearing support from kin (e.g., grandparents) has been thought as an important factor that is associated to good quality of parenting (such as parental warmth) or buffers the negative effects of life stress on quality of parenting (Cox et al., 2000; Sotomayor & Applewhite, 1988; Taylor, 1996). The above view is supported by the present finding of the African American families. Specifically, compared to those experiencing sharply declining monitoring knowledge over time, the African American mothers who experience stable high monitoring knowledge were more likely to receive average high levels of grandmothers' childrearing involvement. This suggests that high levels of grandmothers' childrearing involvement facilitated mothers' monitoring knowledge in long term.

In the present study, both the African American mothers with stable high monitoring knowledge and those with high declining monitoring knowledge gained high levels of

information about their children in early adolescence. However, the major difference between the two groups of mothers is that the former's knowledge about their children was consistently high over time, while the latter experienced a sharp decline in the monitoring knowledge. Based on this difference, grandmothers' childrearing involvement may play an important role in assisting the mothers in gaining information about their children's daily activities in middle or late adolescence in the African American families. Middle and late adolescence has been portrayed as the period when children have more chances to explore the extra-familial world and their needs in independence and autonomy also accelerate (Collins & Steinberg, 2006). Such expansion of extra-familial experiences and their growing needs in being independent probably impede the African American mothers from gaining information about their children either through their own active solicitation or the children's self-disclosure. Yet, if the mothers receive strong childrearing support from the grandmother during this period, they may rely on the grandmother to help monitor their children so that they are able to be more efficient in supervising their children's free-time activities.

By contrast, the findings of the Latino families indicate that the grandmothers' childrearing involvement was neither a facilitator nor an impediment to mothers' monitoring knowledge. The findings are inconsistent with the previous research on Latinos suggesting that grandmothers' childrearing involvement is related to good quality of parenting (Contreras, López, Rivera-Mosquera, Raymond-Smith, & Rothstein, 1999). The reasons behind the no effect of the grandmothers' assistance are not clear. One possible explanation is that extensive grandmother support in childrearing may result in the dispersion of responsibility for supervising children's free-time activities and the decrease in obligation for the mothers to actively solicit or understand their children's daily life. Indeed, Contreras' (2004) study of Puerto Rican mothers also suggests

that grandmothers' excessive childrearing assistance may confuse the mothers about assignment of responsibility for the parenting and discourage them to establish their own parenting skills (e.g., showing positive affect). Contreras' study and the present study focused on different populations in relation to the age of the caregiver and the focus child, with the former focusing on the adolescent mothers with infants or toddlers (in age from 12 to 42 months) while the present study consisted of adult mothers with adolescents. Albeit existence of this difference, both studies suggest that indicators of family cohesion (e.g., grandmothers' childrearing support) may not necessarily lead to good quality of parenting.

Another possibility is that the grandmother-grandchild intergenerational gap may be too large so that the grandmother may not be able to efficiently help the mother gain information about the child's free-time activities. Although grandparents who are involved in childrearing are able to absorb knowledge from grandchildren, they are also faced with barriers in understanding the grandchildren's life due to being exposed to different cohort experiences (Hirshorn, 1998). Moreover, many immigrant families experience high degrees of intergenerational gaps because of different rates of assimilation into the mainstream culture across generations (Kwak, 2003) and intergenerational language gap (Portes & Rumbaut, 1996; 2001). In general, older generations (e.g., parents or grandparents) tend to identify their cultures of origin and assimilate into the new culture at a slower rate because they grew up in their countries of origin during their formative years. Also, older generations like speaking their native language and may not be fluent in English. In contrast, younger generations (e.g., grandchildren) are more likely to identify with the new culture and speak in English fluently because of exposure to schooling and media during their formative years. Accordingly, the Latino grandmothers may be faced with many challenges in parenting their grandchildren, such as tracking of their free-time activities,

because they do not understand the American mainstream culture as their grandchildren do as well as have language barrier in understanding English. Likewise, the Latino grandchildren may think that their grandmothers are not able to understand their daily life due to the gap in cultural values and language, and thus conceal their personal information from their grandmothers. Such stagnation in grandmother-grandchild information flow perhaps explains why the grandmothers' childrearing involvement does not facilitate mothers' monitoring knowledge.

Although both the dispersion of responsibility for supervising children and intergenerational gap provide possible explanations for no effect of the grandmothers' assistance on mothers' monitoring knowledge for the Latinos, it is unclear regarding which one does portray the Latino family dynamics. In addition, if both obstacles do exist in the Latino families, it is unknown why these appear not influential for the African Americans. The grandmother-grandchild intergenerational gap for the African Americans may not be as large as for the Latinos, since almost all the African American families in the present study were identified as migrating to the US at least beyond second generations. Yet, future research is called for to clarify why grandmothers' childrearing support seems not leading to the dispersion of responsibility for supervising children in the African American families. Future qualitative approach may provide more information on differences in implication of grandmother support for family dynamics between African American and Latino families.

6.6 Mothers' Monitoring Knowledge and Adolescent Outcomes

Examining associations between trajectory groups of mothers' monitoring knowledge and developmental outcomes in late adolescence indicates that mothers' stable high or slowly declining monitoring knowledge may prevent adolescents' maladjustment, primarily in terms of externalizing behavior area. Both the African American and Latino adolescents were least likely

to have externalizing behavior problems when their mothers maintained their monitoring knowledge in a high level (stable high for the African Americans and slowly declining for the Latinos) rather than experiencing stable low or high declining knowledge. The present findings are in line with the previous view suggesting that adolescents' externalizing behavior problems can be prevented by high levels of parents' monitoring knowledge, regardless of being formed either through their active solicitation or children's self-disclosure (e.g., Engels et al., 2006; Laird et al., 2003). The findings of Engels et al. and Laird et al. were based on cross-sectional data or two-adjacent time points. Extending their work, the present study provided evidence on the preventive role of mothers' consistently high monitoring knowledge for externalizing behavior problems of African American and Latino adolescents in low-income families.

It remains unclear whether mothers' consistently high monitoring knowledge also plays significant role in preventing adolescents' externalizing behavior problems among middle to upper classes. Yet, the present study suggests that at least among the adolescents in the low-income African American and Latino families, such stable high knowledge across the adolescent years is an important protector for their adjustment in externalizing behavior. This finding is not in line with some previous view asserting that parents may not need to be involved in their children's daily life too much during middle and late adolescence, since teenagers during this period are much like adults and this period is the timing for them to gradually establish their own boundary from the family system (see discussion of Collins & Stenberg, 2006 and Smetana, 2002). On the contrary, the present finding suggests that parents' (at least mothers') protection and supervision over children's daily activities remains critical and beneficial to the children's development, at least in terms of externalizing behavior adjustment of the African American and Latino adolescents in the low-income families.

Two possible reasons may explain the above implication. The first is regarding social circumstance of the current sample. In the present study, all participating households were of low-income and drawn from low-income neighborhoods. As discussed previously in this article, low-income neighborhoods are in general characterized as having a lot of risks, such as gang activities and drug abuse. Being exposed to this disadvantaged condition, these adolescents probably are at high risk at engaging in problem behaviors. In face of such condition, the adolescents may be free from the impact of risk factors when their mothers continuously take an active action of gathering information about their daily whereabouts and activities either through active soliciting or building unimpeded communication channels that facilitate the children's self-disclosure, even in middle and late adolescence.

The second reason is in relation to the cultural values of African Americans and Latinos. As previously discussed in this article, both African American and Latino families place great emphasis on the importance of parental authority and parent-child connectedness. Thus, although development of autonomy is a universal developmental need, both the African American and Latino adolescents in the present sample may interpret indicators of mother-child connectedness and maternal authority (i.e., mothers' stable high monitoring knowledge) as mothers' demonstration of care and love. When perceiving such protective connotation behind this family dynamics, they may be more likely to appreciate mothers' supervision and overprotection, and thus tend to stay away from externalizing behavior problems.

By contrast to the findings on externalizing behavior problems, the findings on school delinquency do not support that mothers' stable high or slowly declining monitoring knowledge plays a significant preventive role. The African American adolescents whose mothers maintained stable high monitoring knowledge did not have less of a tendency to engage in school delinquent

behavior than their peers whose mothers experienced stable low or high declining knowledge. For the Latino adolescents, although those whose mothers with slowly declining monitoring knowledge scored lower in school delinquency than those whose mothers with low monitoring knowledge over time, this difference was with a statistically marginal level ($p = .100$).

One possible reason that explains why the preventive role of mothers' monitoring knowledge for school delinquency is not salient may be due to that the focus areas of the measure for mothers' monitoring knowledge are not quite related to children's school life. In the present study, mothers' monitoring knowledge was assessed with their knowledge about children's whereabouts after school and at night as well as activities with regards to friends, free-time activities, and money usage. Albeit the indicator about children's whereabouts after school is in relation to school area, the other four indicators do not explicitly focus on the issues about children's school life—such as copying homework, being suspended or expelled, and cheating—which are the focus of the current measure for school delinquency. To examine the above possibility calls for the further research distinguishing mothers' monitoring knowledge on the regular activities from the school area. Doing so will help clarify whether preventive roles of mothers' monitoring knowledge are generally effective across different areas of maladjustment, or only occur when the focus areas of mothers' monitoring knowledge correspond to those of children's daily issues.

Little is known about whether high levels of mothers' monitoring knowledge are a protector or a risk for adolescents' internalizing behavior problems. The present study shed light on implication of mothers' long-term monitoring knowledge for internalizing behavior adjustment for the African American and Latino adolescents living in the low-income families. In this study, the African American adolescents whose mothers with stable high monitoring

knowledge were less likely to have internalizing behavior problems than those whose mothers with stable low knowledge. This finding is in line with the perspective that high levels of mothers' monitoring knowledge may protect adolescents from internalizing behavior problems since high levels of mothers' monitoring knowledge reflect parent-child closeness and this closeness still plays an important role in benefitting psychological adjustment in adolescence (Collins & Stenberg, 2006). This also corresponds to the possibility that the culture of African Americans emphasizes importance of parent-child connectedness so that consistently high levels of mothers' monitoring knowledge are more likely to bring positive implication for children's developmental outcomes.

Interestingly, regardless of their mothers with stable high or high declining monitoring knowledge, the tendency of the African American adolescents in the study to have internalizing behavior problems was similar. The overall finding indicates that the present sample of African American adolescents' susceptibility to internalizing behavior problem is growing when their mothers experience consistently low levels since early adolescence; in contrast, their tendency decreases when their mothers experienced high levels of monitoring knowledge at least in early adolescence. In other words, establishing family dynamics facilitating parent-child closeness in early adolescence may bring the most profound positive effect on adolescents' internalizing behavior adjustment, while a decline in such establishment in middle or late adolescence appears not very influential, for the African American adolescents living in the low-income families.

The reason behind the difference in levels of importance of mothers' monitoring knowledge between early and middle/late adolescence for the African American adolescents in the study may be explained by children's social context across different adolescent stages. Although children across races/ethnicities may have different onsets to develop autonomy, there

is still universal commonality. Compared to those in early adolescence, teenagers in middle or late adolescence have more opportunities to explore the extra-familial environments (Grotevant, 1998), and thus may view keeping some distance from their parents or concealing secrecy as a demonstration of being independent. Also, as children age, their need for autonomy and freedom is growing (Collins & Stenberg, 2006) so that they are more likely to take parents' insufficient involvement in monitoring and supervision for granted. Accordingly, the African American teenagers in this study may not view a decline in mothers' monitoring knowledge in middle or late adolescence as an indicator for their alienation from the mothers, and thus their internalizing behavior (psychological) adjustment is not influenced.

By contrast to the findings on the African American families, the findings on the Latino families indicate that the adolescents whose mothers with slowly declining monitoring knowledge and those whose mothers with low monitoring knowledge were not different in their tendency to have internalizing behavior problems. This suggests that high levels of mothers' monitoring knowledge over time is neither a protector nor a risk for internalizing behavior problems of Latino adolescents living in the low-income families. The reasons behind such no link may be explained by acculturation of Latino adolescents. High- and low-acculturation Latino adolescents interpret the family dynamics (e.g., mothers' monitoring knowledge) that facilitates parent-child closeness are different. High-acculturation Latino adolescents may view establishment of this family dynamics as a threat to development of independence, because they tend to assimilate the American mainstream culture that emphasizes the importance of developing autonomy and independence in adolescence (Kwak, 2003). In contrast, low-acculturation adolescents may view this dynamics as a way to maintain closeness with their mothers since they identify the family dynamics aligned with their cultural tradition, such as

family cohesion and parent-child connectedness. Compared to the low-acculturation counterparts, the high-acculturation Latino adolescents are more likely to develop internalizing behavior problems since the family dynamics behind high levels of mothers' monitoring knowledge does not match with their need. The present study only had information on adolescents' generational status, but did not assess their acculturation orientation with a variety of indicators—including behavior, ethnic identity, and values—which are more able to reflect Latino adolescents' acculturation. To examine the previously-mentioned possible reason, thus, future research is called for to investigate a variety of the above-mentioned acculturation indicators and examine relations between mothers' monitoring knowledge and adolescents' internalizing behavior problems across different acculturation levels.

6.7 Implications

By examining mothers' long-term monitoring knowledge and its relation with family and neighborhood context as well as developmental outcomes in late adolescence, the present study shed light to potential prevention and/or intervention actions for purposes of improving adolescent developmental outcome and family environment of low-income and urban African Americans and Latinos. First, examining relations between mothers' long-term monitoring knowledge and adolescent developmental outcome suggests that maintaining monitoring knowledge with a stable high or slowly declining level across the overall adolescent years can prevent maladjustment, at least in internalizing behavior adjustment for the African American adolescents and externalizing behavior adjustment for the adolescents in both ethnicities. Accordingly, social workers who serve youth and families may advance prevention programs to educate low-income African American and Latino mothers, particularly those living in urban and low-income neighborhoods, about the positive implications of gaining information about their

children's whereabouts and activities in adolescence for the prevention of externalizing and/or internalizing behavior problems. The programs can also be targeted at addressing these populations about the importance of sustaining high levels of knowledge about their children's daily issues. As children enter into middle and late adolescence, mothers may think supervision and monitoring are no longer necessary because their children are much like adults and it is a period for the children to establish personal boundaries. On the contrary to the above idea, the present findings suggest that mothers' active involvement remain a critical parenting tactic that is able to protect their children from risks in relation to low-income neighborhoods and prevent their behavior problems.

Second, the present findings on the facilitators and impediments to mothers' monitoring knowledge provide useful information for social workers to think about in designing preventions and/or interventions aiming to help mothers maintain high levels of monitoring knowledge across adolescent years. In terms of family environment, family routine was identified as a common facilitator to mothers' monitoring knowledge for low-income families in both ethnicities. Accordingly, social workers may design the prevention programs including the workshops or curriculums that aim to guide low-income African American and Latino mothers to learn strategies for establishing common family times to enhance positive parent-child communication.

The workshops or curriculums may also include discussion on implication of harsh discipline for low-income African Americans and Latinos. There remains unclear whether harsh discipline brings positive or negative effects on parent-child relationship in the African American and Latino families. A number of previous research indicates that harsh discipline is linked to parent-child closeness or parental warmth in the African American and Latino families (e.g., Hill

et al., 2003; Steele et al., 2005), suggesting this parenting tactic probably is interpreted as conveying positive connotation, such as parents' care, for the children in both ethnicities. In contrast, the present finding suggests that harsh discipline may still deliver negative meanings (e.g., parents' hostility) for the children in both ethnicities and impede parent-child closeness, and thus average high levels of harsh discipline over time may hinder opportunities for mothers to maintain monitoring knowledge with a stable high or slowly declining level. Since there remain debates over implication of harsh discipline, social workers may present scholarly findings to show complexity in this area. Also, they can encourage mothers to share their personal experience on use of harsh discipline and its effects on quality of parent-child relationship and adolescents' developmental outcomes. These discussions probably can help the low-income African American and Latino mothers integrate scholarly research and practical experience to think about the potential pros and cons of harsh discipline for family relation and adolescent development.

Specifically for urban and low-income African American families, a number of suggestions are provided for facilitating mothers' monitoring knowledge. In terms of neighborhood context, the present finding suggests that these mothers' monitoring knowledge is quite susceptible to impact of neighborhood cohesion and this impact may be more dominant than the impact of within-familial factors (e.g., family cohesion and parenting behavior). Hence, the present study advocates that social workers can develop prevention and/or intervention programs that are targeted at strengthening mutual supports and trust among neighbors. Doing so can enhance the overall cohesion in communities and in turn promote positive dynamics of the low-income African American families, particularly in terms of mothers' supervision and monitoring on their children's whereabouts and activities.

In addition to the above implication for social workers, the present finding also provides the implication to policy-makers in terms of how budget-decision may play an important role in enhancing neighborhood cohesion in the low-income African American families. In reality, the budget cuts have occurred across 46 states in the US in all major services for community development during the past decade (Center on Budget and Policy Priorities, 2011). The budget reductions can halt the programs for supporting community connection (e.g., the operation of community centers) or deteriorate the quality of the programs. Since mutual support among community members plays an important role in benefiting the low-income African American mothers' parenting efficacy, the study advocates that policy-makers deliberate how to appropriately allocate budgets to support the services for strengthening community cohesion.

Another suggestion is to address the importance of grandmothers' childrearing support. The present study identified grandmothers' childrearing involvement as a facilitator to positive family dynamics, particularly in terms of high levels of mothers' monitoring knowledge. Also, grandmothers' childrearing involvement has been described as reflecting emphasis on family connectedness for the African American families. Accordingly, social workers can design the workshops on addressing potential positive implications of ethnic heritages for shaping family dynamics and use grandmothers' childrearing support as an example to discuss its positive implication for mothers' efficacy in supervising adolescents' free-time activities in the urban and low-income African American families.

6.8 Limitation

Four limitations have to be kept in mind for interpretation of the present findings. For one, the present urban and low-income populations were recruited in three cities, i.e., Chicago, Boston, and San Antonio. Thus, the present findings cannot be generalized to the low-income

populations in other urban areas in the U.S. Future research on national low-income populations is called for. Second, the sample size of each Latino subgroup was too small to be analyzed separately, and thus the present study examined the Latino sample as a whole. Recent research has cautioned that investigating Latinos as a whole can conceal the within-group heterogeneity (Harwood et al., 2002). Yet, it is noteworthy that the present Latino sample is still homogeneous to some extent, at least in terms of the low-income background. Also, the three major Latino subgroups in this study have comparable poverty rates (25.0%, 26.3%, and 25.6% for Mexicans, Dominicans, and Puerto Ricans, respectively) between 2007 and 2011 based on the US Census (2013). Accordingly, the internal heterogeneity may not be so salient in the present sample.

Third, although both the mother and the child were surveyed, the present study did not assess the same constructs (e.g., mothers' monitoring knowledge) from both adolescent and maternal report. Whereas some research has indicated levels of consistency between adolescent and parent report in family dynamics is high (Park et al., 2008), future research will benefit from comparing constructs based on both adolescent and maternal report. Fourth, the present study only assessed mothers' monitoring knowledge at three time points. Future research measuring more time points will provide more precise estimation of trajectories of monitoring knowledge.

6.9 Future Directions

A number of future directions are suggested for enhancing our understanding of parents' monitoring knowledge. First, while mothers are the primary caregivers in the low-income households, examining fathers' monitoring knowledge will provide rich information on family dynamics and its relation to adolescent development in the low-income populations. Second, future research is called for to distinguish mothers' monitoring knowledge on regular activities from school area. Doing so will benefit understanding of whether preventive roles of mothers'

monitoring knowledge are only effective when the focus areas of mothers' monitoring knowledge match with those of children's daily issues. Third, assessing a variety of information on acculturation (i.e., behavior, racial/ethnic identity, cultural values) will address whether associations between mothers' monitoring knowledge and adolescents' internalizing behavior problems vary according to adolescents' acculturation orientation.

Fourth, this study used only three items to conceptualize harsh discipline. Future research using more items may capture more reliable construct of harsh discipline and help clarify relations between mothers' harsh discipline and monitoring knowledge. Next, future research will benefit from examining issues on mothers' monitoring knowledge for other low-income populations (e.g., European and Asian Americans) and middle- or upper-class families across races/ethnicities. Doing so will enhance understanding of fluidity and complexity of family dynamics and how its relationship to adolescent development varies according to socioeconomic status and races/ethnicities. The last, the present study has identified a number of facilitators and impediments to mothers' monitoring knowledge for both the low-income African American and Latino families. Future qualitative research (e.g., interviewing both parents and adolescents and observation of family dynamics) is called for to unpack the underlying mechanism by which the identified factors facilitate or impede mothers' monitoring knowledge. Qualitative research will also help clarify why mothers' monitoring knowledge is unrelated to some factors, such as their overtime work for both ethnicities and grandmothers' childrearing involvement for the Latino families.

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