

Sibling Behaviors and Mexican origin Adolescents'

After-School Activities

by

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## ABSTRACT

Time adolescents spend in organized or informal skill based activities after school is associated with a variety of positive developmental outcomes. Little is known about how siblings might shape adolescents' motivation to participate in after-school activities. The current study applied the expectancy value model and ecological theory to understand if sibling behaviors were related to adolescents' after-school activities for 34 Mexican origin families. Qualitative and quantitative results suggested siblings engaged in five promoting behaviors (i.e., support, provider of information, role modeling, comparison, co-participation) and three inhibiting behaviors (i.e., babysitting, transportation, and negativity) towards adolescent activity participation. Furthermore, sibling behaviors differed by adolescent characteristics (i.e., cultural orientation, familism, and neighborhood) and sibling characteristics (i.e., gender, age). The results provide evidence of the various promoting and inhibiting socialization behaviors sibling might use to influence adolescents' activity motivation.

## DEDICATION

In memory of my undergraduate mentor, Dr. Duane Bushmaster, for his contribution to sibling research and support of my pursuit for graduate training.

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## **Sibling Behaviors and Mexican-origin Adolescents' After-School Activity Participation**

Examining how adolescents spend their day is a window into the various contexts and relationships shaping their development (Bronfenbrenner, 1979). Understanding how adolescents navigate these contexts, such as schools or extracurricular activities, is essential to being able to help promote positive development (e.g., Barber, Stone, Hunt, & Eccles, 2005; Smetana, Crean, & Campione-Barr, 2005). Children in the United States spend nearly half of their waking hours outside of school (Larson & Verma, 1999). Adolescents spend time engage in a variety of activities after school, such as family time, personal care, studying, leisure pursuits and, of interest here, organized and informal skill based activities (e.g., Hofferth & Sandberg, 2001; McHale, Updegraff, Kim & Cansler, 2009). Organized activities have specific goals, adult leaders, regular meeting times, and are located in schools and communities (e.g., school student council, community soccer team), whereas informal skill-based activities tend to be child directed, more spontaneous, and develop an individual's skills in a domain (e.g., spending time writing poetry, reading) (e.g., King et. al., 2006; Larson & Verma, 1999; Mahoney, Larson, & Eccles, 2006). Participation in organized activities or informal skill-based activities is typically beneficial; it is associated with a wide variety of positive youth development indicators such as academic performance, skill and identity development, positive relationships, enjoyment, and decreased internalizing problems and delinquency (e.g., Bohnert, Fredricks, & Randall, 2010; Feldman & Matkasko, 2005; King, Petrenchik, Law & Hurley, 2009).

Mexican-American youth who spend high amounts of time hanging out unsupervised have higher risky behavior and depressive symptoms, highlighting a need for quality after school time use (McHale et al., 2009). However, Mexican origin youth, the fastest growing adolescent population in the United States, participate in organized activities at lower rates compared to other ethnic groups (Darling, Caldwell, & Smith, 2005; Pedersen, 2005; Ramirez, 2004). This average low participation is troubling as Mexican origin youth are often at risk for negative developmental outcomes, such as academic underachievement or acculturation stress (e.g., Davalos, Chavez, & Guardiola, 1999; Hurtado-Ortiz & Gauvain, 2007; Romero & Roberts, 2003). The research, however, suggests that there is variability in the activity participation of Mexican origin youth, where some adolescents are highly involved in organized activities (Fredricks & Simpkins, 2011; Simpkins, O'Donnell, Delgado, & Becnel, 2011). Latino adolescents' participation in organized activities is associated with additional benefits, such as higher ethnic and community identities and mentoring relationships (Fredricks & Simpkins, 2011; Villarruel, Montero-Sieburth, Dunbar, & Outley, 2005). Thus, one important next step is to identify what predicts Latino adolescents' participation in after-school activities.

### **The Importance of Siblings**

Researchers have examined how a variety of people are part of adolescents' organized activity participation and after-school time use, including friends, parents, and leaders (e.g., Denault & Poulin, 2009; Perkins et. al., 2007). During adolescence, siblings act as important sources of family and peer

socialization (e.g., Furman & Buhrmester, 1985; Lempers & Clark-Lempers, 1992), and out of school time companionship (McHale & Crouter, 1996). Siblings provide social needs (e.g., affection, instrumental help) and fulfill various social roles (e.g., playmate, competitor, protector) that are distinct from other types of relationships, such as parents or friends (Furman & Buhrmester, 1985). Sibling relationships are further unique from other adolescent relationships due to their emotional intensity, high levels of intimacy, and the uniqueness of being both a peer and a family relationship (Cox, 2010; Dunn, 1993). Thus, siblings might play a critical role in shaping adolescents' after-school time use.

Sibling behaviors might be especially important for Mexican origin adolescents for two reasons. First, Mexican origin adolescents tend to have a higher number of siblings and spend more time with siblings than do their European American counterparts (Brindis et. al.,2002; Updegraff, McHale, Whiteman, Thayer, & Delgado, 2005). Drawing from the peer influence literature, simply due to the amount of time siblings spend together it would be expected to see increased socialization (Brown, Bakken, Ameringer, & Mahon, 2008). Indeed, Tucker, McHale, and Crouter (2008) found that when siblings spent more time in shared constructive activities after school, adolescents reported better adjustment (e.g., self-esteem). Second, two-thirds of all Mexican children are first or second generation immigrants (Passel, 2011). Siblings may play a more prominent role in immigrant families because Latino culture often emphasizes family, increasing the importance of siblings. And, as youth acculturate at a faster rate than parents, siblings might be more familiar with

American organized activities. (Cauce & Domenech-Rodriguez, 2002; Szapocznik & Kurtines, 1993). For example, research on academic achievement of first and second generation Mexican origin youth has found that siblings are as or more important than parents (e.g., Alfaro & Umana-Taylor, 2010; Buriel & De Ment, 1997; Hurtado-Ortiz & Gauvain, 2007). Thus, we expect siblings are important to study as socializers of Mexican origin adolescents' activity participation.

### **Theoretical Orientation**

According to the expectancy-value model of motivation, adolescents' participation in activities is driven by their motivational beliefs about activities (Eccles, Wigfield, Harold, & Blumenfeld, 1993). Youths' motivational beliefs are strong predictors of their after-school activity participation and performance (e.g., Fredricks et. al., 2002; Simpkins, Fredricks, Davis-Kean, & Eccles, 2006). The expectancy-value model suggests that these beliefs are shaped by adolescents' previous experiences and socializers, both of which have been supported empirically (Chassin, Pressen, Todd, Rose & Sherman, 1998; Laursen & Collins, 2009; Simpkins, Vest, Dawes, & Neuman, 2010).

Although parents are traditionally the focal socializers in the model, there are other socializers within the family. Previous research applying the expectancy-value model to adolescents' academic achievement found that sibling support was a unique source of influence, controlling for parental influence (Bouchey, Shoulberg, Jodl, & Eccles, 2010). A different study provided evidence that parents' expectations for their children can depend indirectly on parent's previous experiences with other siblings in the family (Whiteman & Buchanan,

2002). Although siblings are theorized as a socializer, the model has yet to be tested for how siblings might influence organized and informal skill based activity participation. Thus, our goal was to adapt the expectancy-value model for sibling socialization of activity participation as shown in Figure 1. We expect that (1) sibling behaviors will be related to adolescents' activity participation, and (2) sibling behaviors will differ based on sibling and adolescent characteristics.

### **Goal 1: How Are Siblings Part of Adolescents' Participation in Activities?**

**Siblings' promoting and inhibiting behaviors.** Sibling behaviors could promote adolescents' participation in organized activities in three ways: modeling, providing information, and support. First, drawing from social learning theory, siblings could model behaviors and attitudes promoting activity participation (Grusec & Mischel, 1966). Research on delinquent behaviors and sexual activity consistently supports siblings' modeling of behaviors as a promoter of adolescents' own engagement in behaviors, even after accounting for shared family and peer influence (e.g., Miller, 2002; Slomkowski, Rende, Conger, Simons, & Conger, 2001; Van Der Vorst, Engels, Meeus, Dekovic, & Leeuwe, 2007). Research also supports siblings modeling attitudes, such as gender role attitudes (e.g., McHale, Updegraff, Helms-Erikson, & Crouter, 2001). Second, siblings could provide information about activities by reducing language barriers or bringing information and experiences about activities into the family (Blocklin, Crouter, Updegraff, & McHale, 2011; Chao, 2006). For example, research on Mexican origin youth has documented a direct flow of information about educational opportunities from older to younger siblings (Hurtado-Ortiz &

Gauvain, 2007; Plunkett & Bamaca-Gomez, 2003). In addition, research with Mexican-American families has documented siblings as a source of knowledge about youth experiences for parents; siblings might also act as a source of knowledge about activities for adolescents (Blockin et. al., 2011). Third, siblings' support of adolescents' participation should increase the likelihood of adolescents participating. Support might take the form of emotional support (e.g., verbal approval) or instrumental support (e.g., practicing with the adolescent). Sibling support is related to adolescent positive development (e.g., Branje, van Lieshout et. al., 2004). And, as siblings are a source of support and advice about life for teenagers, this could include organized activities (Tucker, Barber, & Eccles, 2001). In sum, we expect a variety of sibling behaviors could promote adolescents' activity participation.

Although the expectancy-value model focuses more on how behaviors can promote activity participation, siblings could also inhibit adolescents' participation in activities through time use, negativity, and constraining resources. First, the type of time spent with siblings could act to inhibit participation. Specifically, in some families, the need for adolescents to help babysit siblings might be more important than participation in activities. Research suggests that immigrant families often have older siblings help with childcare, which could constrain adolescents' ability to engage in other after-school activities (e.g., Valenzuela, 1999). Second, sibling relationships contain both positive (e.g., companionship, intimacy) and negative (e.g., conflict, punishment) characteristics, which have been validated in Mexican origin families (Furman &

Buhrmester, 1985; Updegraff et. al., 2005). Siblings who display negative behaviors towards activities, such as teasing or conflict, might discourage an adolescent from taking part in an activity. Third, siblings might indirectly influence adolescents by affecting parenting goals and resources available to other children. For example, siblings' engagement in problematic behaviors might result in parents restricting the activities of their other children. Likewise, having siblings in an activity might constrain time and monetary resources of the family and affect the adolescents' activity participation (Simpkins, Delgado, Price, Quach, & Starbuck, 2011). In sum, we expect a variety of sibling behaviors could inhibit adolescents' participation in activities.

Sibling researchers have previously highlighted how siblings might directly or indirectly influence adolescents. Direct influence is thought to occur when siblings or sibling behavior, such as serving as a role model or as a playmate, directly influences adolescents. Indirect influence is thought to occur when having a sibling in the family can alter the family system or parental behaviors toward adolescents (McHale & Crouter, 2003; McHale, Crouter, & Whiteman, 2003). The goal of the current study is to examine both direct and indirect influences of siblings on adolescents' activities. Thus, while the term behaviors will be used to describe interactions of siblings, this term does not distinguish between direct and indirect influences, and may include behaviors that are less traditionally called behaviors (e.g., babysitting) (e.g., East, 2009; Furman & Buhrmester, 1985).

## **Goal 2: How Behaviors Might Vary by Adolescent, Neighborhood, and Sibling Characteristics**

According to ecological theory, development is a function of the person and interactions within microsystems and macrosystems (Bronfenbrenner, 1979). Adolescents take part in a number of microsystems such as the family, school, and local community. Interactions between an adolescent and a sibling, or an adolescent and an activity, are considered proximal processes. These proximal processes are shaped by the characteristics of the persons involved, such as gender of the sibling. Furthermore, the developmental processes that occur in these microsystems are nested within larger macrosystems, notably race, culture, and socioeconomic status, that constrain and afford developmental experiences. For example, the values of the larger cultural macrosystem, such as the importance of family in Mexican culture, will constrain or afford opportunities in the microsystem. Consistent with ecological theory, a recent review of cultural research has supported the role of the interactions between individual and larger contextual characteristics in the development of sibling relationships (Updegraff, McHale, Killoren, Rodriguez, 2011). The second goal of this study is to examine how sibling behaviors differ across adolescent and neighborhood characteristics, specifically cultural orientation, family-peer orientation, and neighborhood, and across sibling characteristics, specifically birth order and gender.

**Adolescent and neighborhood characteristics: Cultural orientation, family-peer orientation, and neighborhood.** Updegraff and colleagues (2011) highlighted how within group cultural differences are related to within group

variability in sibling relationships. Cultural orientation is a prevalent within group difference in Mexican origin populations. Previous qualitative and quantitative work on organized activities indicates that there are within group differences in why and when Latino adolescents participate or do not participate in organized activities based on markers of cultural orientation (i.e., generation status, nativity) (Borden et. al., 2006; Simpkins et al., 2011). The process of cultural orientation involves the degree of orientation in attitudes and behaviors towards the mainstream culture (i.e., acculturation), and the degree of orientation to ones' culture of origin (i.e., enculturation) (Berry, 2006).

Sibling behaviors should differ based on youths' acculturation and enculturation for two main reasons. First, knowledge and participation in organized activities are typically part of interactions with the American mainstream culture (Simpkins et al., 2011). As adolescents acculturate faster than parents, siblings are more proximal to the processes surrounding participation in organized activities (Szapocznik & Kurtines, 1993). Indeed, education research has found that siblings are more familiar with school and community settings than parents, thus more apt to help adolescents, in immigrant families (Hurtado-Ortiz & Gauvain, 2007; Suarez-Orozco & Suarez-Orozco 1995). Second, increased importance of Mexican culture values in high enculturated adolescents, such as the importance of family, could increase the importance on siblings (Knight et. al., 2010). We expect siblings to engage in more behaviors for adolescents displaying high American-high Mexican orientation. These adolescents might be oriented toward activities (given their American cultural orientation) and interact

frequently with siblings (given their Mexican cultural orientation). Sibling behaviors might be the lowest for adolescents with low American-low Mexican orientation. Sibling behaviors might be moderate for adolescents with mixed American and Mexican orientation (i.e., high on one and low on the other).

Familism, a Mexican cultural value, emphasizes family member support, loyalty, respect, and interdependence (Cauce & Domenech-Rodriguez, 2002). Familism socialization strategies within the family often emphasize the role of children's behaviors in supporting family functions, such as bilingual children helping parents navigate language barriers, and are thought to be protective factors for development (German, Gonzales, & Dumka, 2009). Previous research supports the relation between familism and the role of siblings, in that adolescents who are high on familism report close, intimate, and time intensive relationships with their siblings (Updegraff et. al., 2005). For adolescents who are high on familism, siblings could be important socializers of activity participation. As this cultural value is central to the issues at hand, we will also explore if siblings' behaviors vary based on adolescents' familism. In the current study, we included a proxy for familism, namely adolescents orientation toward family versus peers.

Last, the neighborhood characteristics that the adolescent lives in can have a profound effect on the context and opportunities adolescent development is situated in. Ecological and sociocultural theories suggest that the constellation of cultural and economic conditions within neighborhoods create distant social class or social positions that drive family processes and adolescent opportunities (García Coll and others, 1996; McAdoo, 1993). Neighborhood mechanisms, such

as institutional resources and collective efficacy, might produce variability in sibling behaviors (Jencks & Mayer, 1990; Leventhal & Brooks-Gunn, 2000; Sampson, Morenoff, & Gannon-Rowley, 2002). Neighborhood differences in the availability of activities might limit the number of opportunities siblings have to engage in behaviors towards activities (Leventhal & Brooks-Gunn, 2000). Neighborhoods differences in cultural norms towards activities or interactions with institutions outside the home (i.e., organized activities) might change what sibling behaviors are expressed (Lareau, 2003). Siblings might be more supportive behaviors in neighborhoods where activity participation is the norm. In contrast, siblings might engage in inhibiting behaviors if activities are viewed as non-essential or dangerous to attend. Some evidence for potential differences in sibling behaviors comes from work on parenting strategies. Parents promote activity participation for their youth when they feel it is a safe environment and use family and non-family members to help shuttle children to safe activities (e.g., Jarret, 1997).

**Sibling characteristics: gender and birth order.** Sisters and brothers might engage in different behaviors for three reasons. First, there are noted differences in types of communication and shared activities done with sisters and with brothers (Blakemore, Berenbaum, & Liben, 2009). Sisters might be more likely to engage in caregiving and supportive behaviors whereas brothers might be more likely to engage in shared activities. Gender role socialization in Latino families might make differences in behaviors brothers and sisters engage in more pronounced (e.g. Raffaelli & Ontai, 2004). Second, females are more likely to be

in organized activities and a wider variety of activities compared to males (McHale, Crouter, & Tucker, 2001). This could result in sisters displaying more behaviors surrounding organized activity participation than brothers. However, it is unclear if these gender patterns will emerge in Latino families. Latino sons are typically allowed more freedom than daughters (Raffaelli & Ontai, 2004). Latino daughters are also more likely than sons to be relied on for helping with child care (Borden et. al., 2007). Thus, it is also possible that brothers could have more experience with activities than sisters. For these reasons, we will explore the data for differences in sibling behaviors by gender of the sibling.

Siblings might also engage in different types of behaviors based on their birth order (East, 2009; Tucker, Updegraff, & Baril, 2010). Birth order might be particularly important during early adolescence, as sibling conflict and rearranging of role structures is prominent during middle school (e.g., Furman & Buhrmester, 1992). Birth order could affect the types of behaviors expressed by older and younger siblings in three ways. First, older siblings are viewed as a source of support about non-familial issues more than younger siblings (e.g., dating norms, Tucker et. al., 2001) and are likely to experience opportunities for some activities, such as high school sports, before younger siblings. Thus, older siblings could engage in more advice giving and modeling than younger siblings. Second, birth order creates certain hierarchical roles within sibling relationships that are associated with dominance patterns (Dunn, 1993). For example, older siblings might be more likely to provide negative feedback about activities than younger siblings, due to their more dominant position. Last, older siblings are

given more intensive family responsibilities, such as babysitting (Burton, 2007; Simpkins et al., 2011). Older siblings could be more likely to display more facilitating behaviors, such as helping practice, than younger siblings. For these reasons, we will explore the data for differences in sibling behaviors by older and younger siblings.

### **Current Study**

The current research project focuses on how siblings are part of Mexican origin adolescents' activity participation through two research questions. First, in applying the expectancy-value model to siblings, we explored how siblings might promote and inhibit adolescents' after-school activities. Second, how siblings' behaviors vary depending on adolescents' characteristics (i.e., cultural orientation, family-peer orientation and neighborhood) and siblings' characteristics (i.e., birth order, gender) was examined. Responding to a call from cultural scholars for more ethnic homogenous research to unpack normative cultural processes that shape developmental variations within an ethnic group, the current study employed a Mexican origin homogenous research design (Garcia-Coll et. al., 1996; McAddo, 1993). As this is an area of new research and we want to fully explore expected and unexpected the process of sibling behaviors affecting participation, qualitative and quantitative data were used to examine these questions. Employing a mixed methods research design allowed for both theory generation (i.e., inductive) and theory testing (i.e., deductive) (Creswell, 2009).

## **Method**

### **Participants**

Our research team used purposive sampling techniques in selecting one public middle school in three distinct neighborhoods near a large metropolitan city in the southwest. Neighborhoods were selected to capture a distinct range of ethnic compositions and average family incomes (Table 1). Neighborhood demographics revealed that median family incomes in Neighborhood A (\$83,000) was almost double that of Neighborhoods B and C (\$46,000 and \$32,000, respectively) (United States Census, 2000). The three middle schools varied in their racial/ethnic composition; School A was largely white (16% Hispanic, 60% white) compared to Schools B and C that were largely Hispanic (School B: 88% Hispanic, 6% white; School C: 91% Hispanic, 4% white (NCEL, 2010). Field notes from school personnel indicated important differences between the neighborhoods in generation status. Although both Neighborhoods B and C were larger ethnic enclaves for Latinos compared to Neighborhood A, residents in Neighborhood B tended to have lived in the U.S. for multiple generations compared to residents in Neighborhood C.

Families were recruited from one middle school in each neighborhood. Letters describing the study were sent home with Latino adolescents. Mexican origin families who noted on the returned form that they were interested in learning about the study were contacted. During a recruitment call, general information that was necessary for participant selection was collected. Mothers were requested to participate as they are often the primary caregiver of youth, but

some fathers also participated (Parra-Cardona et al., 2008). At the beginning of the study, we strived to stratify the sample by neighborhood, gender, and activity participation (i.e., organized or informal). Within organized activity participation, at onset we strived to balance across a variety of activity types (e.g., sports, arts, academic) within each neighborhood. Furthermore, adolescents who participated and who did not participate in organized activities at the outset of the study were matched on gender, GPA, language preference, nativity, and proximity to the school within each neighborhood to control for common demographic indicators and selection factors. If multiple matches were possible, adolescents who fit were randomly selected. Participant characteristics are shown in Table 1.

Participants in the study included 34 Mexican origin 7<sup>th</sup> grade adolescents (16 male, 18 female) and their parents (32 mothers, 2 fathers). This sample size fell within the accepted range for qualitative research when studying the process of a phenomenon within a homogeneous ethnic group (Creswell, 2003). The median family income for families in Neighborhood A was \$50,000-59,000 compared to \$20,000-29,000 and \$10,000-19,000 in Neighborhoods B and C. Differences were found in maternal language use, with 70% of the mothers in Neighborhood A primarily English speaking, compared to 17% in Neighborhood B and 0% in Neighborhood C. Parent occupation in Neighborhood A tended to reflect a higher educational level (e.g., mortgage loan officer, electrician) compared to parents in Neighborhood B (e.g., janitor, welder) and Neighborhood C (e.g., restaurant cook, landscaping laborer). In addition, adolescents in Neighborhood A tended to be third generation whereas youth in Neighborhoods B

and C tended to be first and second generation. Adolescents did not differ in language use or family-peer orientation across the neighborhoods.

Family size was similar across neighborhoods, with the average number of children ranging from 2.5 to 2.9. Across the sample, families ranged from having zero to eight children in the immediate household ( $M=2.68$ ,  $SD=0.12$ ). Thirteen adolescents had an older brother (range: 1-2 brothers; ages 14 to 22 years old), 9 adolescents had older sisters (range: 1-3 sisters; ages 12 to 27 years old), 21 had a younger brother (range: 1-3 brothers; ages 1 to 11 years old), and 15 had a younger sister (range: 1-5 sisters; ages 1 to 11 years old). One adolescent did not have siblings and was dropped from the analysis.

## **Procedures**

Because organized activity offerings change across seasons, all participants were interviewed individually in January, May, and the summer of 2010. Consent and assent were collected in January. Qualitative and quantitative data were collected at each interview. Parents and adolescents received monetary compensation for their participation (\$20 per person per interview). Interviews took place in families' households (except one at a library) and were conducted in the participants' preferred language. All but one adolescent interview was conducted in English. The bilingual interviewers and transcribers were primary Spanish speakers, and lived in these local communities. Each interview was audio recorded and lasted approximately 45-90 minutes. Interviews in Spanish were translated and transcribed through the following steps: (a) the interview was transcribed in Spanish, (b) the Spanish transcription was checked by a second

person, (c) discrepancies between the transcribers were resolved, (d) the Spanish transcription was translated into English, (e) the translation was checked by a second person, and (f) discrepancies between translators were resolved.

Interviews in English were transcribed using steps a, b, and c in English.

Incomplete interview data existed for six of the families. Only January interview data was collected from three families: one family opted out of the study after the first interview due to family illness and two families moved back to Mexico. One family only completed the January and Summer interviews due to lost contact during the spring semester after the family moved homes. Two families did not complete the summer interview: one family moved out of the state and did not want to remain in the study and one family lost contact.

Although the missing data from families was equally dispersed across neighborhoods and activity participation, five of the six families included were Spanish speaking parents.

**Quantitative measures.** Adolescents and parents reported their age, gender, birth country, language preference, family income, ethnicity, and cultural orientation. Cultural orientation was measured during the May interview with the Acculturation Rating Scale for Mexican-Americans (ARSMA-II; Cuéllar, Arnold, & Maldonado, 1995). Two subscales measured Mexican orientation and Anglo orientation (e.g., “I liked to identify myself as an Anglo/Mexican-America,” “I think in Spanish/English”; 1=*not at all*, 5=*extremely often or almost always*; parent’s Mexican orientation,  $\alpha = .94$ ;  $M = 3.89$ ,  $SD = .92$ ; parents’ Anglo orientation,  $\alpha = .95$ ;  $M = 2.91$ ,  $SD = 1.19$ ; adolescents’ Mexican orientation,  $\alpha =$

.82;  $M = 3.68$ ,  $SD = .62$ ; adolescents' Anglo orientation,  $\alpha = .60$ ;  $M = 4.15$ ,  $SD = .36$ ). Parents' and adolescents' scores were dichotomized into high and low Mexican and Anglo orientation based on the sample mean. From these scores, adolescents were classified into one of the four cultural orientation patterns: a) high American-high Mexican ( $n=8$ ), b) high American-low Mexican ( $n=5$ ), c) low American-high Mexican ( $n=4$ ), and d) low American-low Mexican ( $n=11$ ).

In order to examine how familism might influence behaviors, a proxy variable for family-peer orientation was created. A part of the qualitative data in the adolescent and parent interviews was coded and converted to a quantitative value measuring family-peer orientation following established procedures (Weisner, 2011). Two coders independently read a section of the transcripts where the adolescent was asked: "Some kids spend time with family after school. Other kids spend all their time after school with friends or away from home. Who do you think 7th graders should hang out with after school?" The coders then rated the interviewee's response on a 5-point scale: family a lot more important (1), family a little more important (2), family and friends equally important (3), friends a little more important (4), or friends a lot more important (5). In cases where there was a discrepancy between the two coders, a third person coded the case. Inter-rater reliability was .90. In order to increase power, responses scoring 1 or 2 were collapsed to form one dimension, as were responses scoring 3 or 4. In the end, adolescents were classified into three family-peer orientation categories: family more important ( $n= 13$ ), family and friends equally important ( $n= 4$ ), and friends more important ( $n= 10$ ).

**Qualitative data.** Similar semi-structured interview scripts were followed for both parents and adolescents regardless of adolescents' experiences with activities. The central difference between the interviews for adolescents was that interviews with organized activity participants asked questions related to their main organized activity and interviews with non-participants asked questions related to the informal skill-based activity they did most often. Questions included in every interview were (a) typical daily routines, (b) beliefs and attitudes about organized activities and time use in general, (b) adolescents' current participation in organized or informal skill based activities, (c) reasons why adolescents participated in an activity, favorite moments, and what they learned (d) people who support their activity, and (e) beliefs about Latino or Mexican culture relative to activities. Adolescents who participated in multiple activities were interviewed about the activity they liked the most or spent the most time in.

As this study was not a sibling design study, no specific interview section informed the results. This study includes data from the full adolescent interview at all three time points. Some sections of the interview tended to illicit talk about siblings, such as questions about people in their lives, how the activity affected their family, or their typical day. But, other sections that did not focus on the sibling were coded when sibling talk came up, such as sections about who their friends were or how they decided to join an activity.

### **Plan of Analysis**

Goal 1 examined what behaviors adolescents reported their siblings exhibited. First, members of the research team coded any discussion of siblings

*and* activities. Talk containing references to just activities (e.g., discussing a practice) or just siblings (e.g., family dinner, watching TV) was not coded. All transcripts were coded using NVivo v9.0. Each team member was trained until they reached acceptable levels of inter-rater reliability on a training transcript (kappas = .80). Twenty percent of the transcripts (i.e., six interviews from each wave) were double-coded to establish inter-rater reliability. The transcripts used for inter-rater reliability were stratified across the three schools and the three interviews. These reliability files were interspersed throughout the coding schedule at regular intervals and met reliability standards (kappas > .80).

Second, text coded as siblings was read by a team, comprised of the first author, the faculty principle investigator, and an undergraduate student. While reading, each person on the team wrote memos noting common types of behaviors (e.g., modeling, family value, shared informal skill based activity) mentioned in the transcripts. The group met to discuss their memos and agreed on a list of common behaviors. These behaviors were then compiled into a set of secondary codes (Appendix A). All text coded as sibling text was then coded a second time for the behavior in the text and the gender and age of the siblings referenced in the text. These secondary codes became the behaviors discussed in the Results. Inter-rater reliability on these secondary codes was also acceptable (kappas > .80).

Goal 2 examined whether sibling behaviors differed by adolescent and neighborhood characteristics (i.e., cultural orientation, family-peer orientation, and neighborhood) and sibling characteristics (i.e., sibling gender and birth order). In order to examine how behaviors differed across adolescent characteristics, data

displays were created to count the number of adolescents reporting each type of behavior by adolescent characteristic (Creswell, 2009). Following recommendations for small sample sizes, Fisher-Freeman Halton exact tests were used to examine differences in groups across each behavior. And, given the small sample size,  $R_{\text{equivalents}}$  were computed and the results are discussed in terms of small (.10), medium (.30), or large (.50) effect sizes (Rosenthal & Rosnow, 1991). Following recommendations for small sample sizes, we also examined the standardized adjusted residuals to identify the cells with counts that were significantly different than expected by chance (adjusted residuals greater than 1.9) and marginally significant (adjusted residuals between 1.5 and 1.9) (Agresti, 2002; Rosenthal & Rosnow, 1991)

To analyze sibling characteristics, all references to sibling behaviors were coded for the birth order (i.e. older or younger than teenager) and gender (i.e. brother or sister) of the sibling referenced in the reference. If the birth order or gender of the sibling involved in the reference was not clear, the reference was not coded. Likewise, if there was more than one sibling involved in the reference, it would have more than one birth order and/or gender code applied to it. Thus, some behaviors might be double coded for multiple sibling characteristics whereas other behaviors might not be coded.

In this study, adolescents often had multiple siblings. We could not use the same strategy used to examine the adolescent characteristics because the data reported by multiple siblings of one adolescent were not independent. To address this issue, sibling characteristics were examined at two different levels, the

adolescent level and the reference level. At the adolescent level, we compared the number of adolescents who mentioned each type of behavior by the type of siblings they had. Adolescents were divided into three groups based on sibling gender (i.e., had only sisters, had only brothers, or had both) and sibling age (i.e., had only older siblings, had only younger siblings, or had both). For example, this allowed us to look at differences in who reported support by if the adolescent had only sisters, only brothers, or both. At the reference level, the percentage of behaviors coded for each sibling characteristic was compared using the matrix coding feature in NVivo v9.0. For example, the percentage of supportive behaviors by older siblings was compared to the percentage of supportive behaviors by younger siblings.

## **Results**

### **Goal 1: How Are Siblings Part of Adolescents' Activity Participation**

First, primary coding across all adolescent interviews resulted in 305 references of talk containing information on siblings and organized or informal skill based activities. From the primary coding, eight distinct sibling behaviors were identified. Analysis of the behaviors identified five sibling behaviors related to promoting adolescents' activity participation: support, providing information, role modeling, comparisons, and co-participation (Table 2). Three sibling behaviors were related to inhibiting adolescents' activity participation: babysitting, transportation, and negativity (Table 2). Unless noted otherwise, the behaviors were how siblings behaved towards the focal adolescent (e.g., siblings supported adolescent), not how the focal adolescent behaved towards siblings

(e.g., adolescent supported siblings). Additionally, although the behaviors are presented as unique contributors to adolescent participation, it should be noted that many of the behaviors co-occurred and were reported across many types of organized and informal skill based activities. The following results examine how the eight sibling behaviors might promote or inhibit adolescents' activity participation.

**Promoting behaviors: Support.** Fourteen of the 33 adolescents talked about how a sibling supported their activity participation (17% of all references; Table 2). Verbal support from siblings was commonly mentioned. Adolescents reported discussions with their siblings about their activity that provided encouragement to keep working on an activity, positive feedback on their performance, or affirmation that their activity was valued. For example, a girl from Neighborhood C who spent time practicing drawing reported feeling good about drawing:

When I mess up, I always crumble the paper, but my sister, like, says it doesn't matter the way you draw, just try...She always tells me to never give up and just try my best, and I like that, [it] encourages me a lot...It gives me the courage to draw.

Providing specific advice on how to improve adolescents' performance was another form of verbal support. Talking about a successful track meet, a boy in Neighborhood A reported advice from his brother:

My brother supports me when I am running...right when the person said go [to start a race], I couldn't hear anything, I couldn't

hear my breathing or anyone running. All I heard in my head was my brother saying keep the pace when you start...I concentrated on my brother's advice.

In addition to verbal support, some adolescents talked about how their siblings spent time supporting them by practicing the activity with the adolescents or attending their games or performances. In one reference, an adolescent girl in Neighborhood A recalled how she worked with her sibling to mutually improve at softball, "Last week [at practice] we worked on sliding, I noticed that [my sister] wasn't doing well. The next day I took her down to the park and all we did was [practice] slides, we were having a little fun." In sum, adolescents reported siblings engaging in verbal (e.g., encouragement) and time (e.g., attending their game) support behaviors towards adolescents' activity participation.

**Promoting behaviors: Providing information.** Seven of the 33 adolescents said their siblings provided information about activities (5% of all references; Table 2). Siblings provided direct information about an activity that the sibling was involved in. Sometimes this resulted in adolescents taking up that same type of activity. For example, a girl in Neighborhood A reported getting involved in track because:

My brothers did cross country. The coach told my brothers to tell me that track is coming up and I should try out. I was a little bit scared because I knew that meets were going to come and I would have to perform, do it in front of everybody. But I gave it a try and I liked it.

Adolescents also reported siblings providing information about activities in general, that helped them and their parents learn about what activities were available. For example, a boy in Neighborhood A wanted keyboard lessons, “so I asked my mom if I could go find an actual teacher and then we went down to the music store since my brother was taking guitar lessons there.” Siblings’ experiences at school or in the community with activities, even if the sibling did not participate, contributed indirectly to adolescents’ activity knowledge. A non-active girl in Neighborhood B knew of Spanish clubs at her school because “my sister used to go to [my] school...because she went, I heard that there were Spanish [clubs].” A non-active boy in Neighborhood A recalled watching a football practice on a field next to his brother’s soccer practice. It looked like fun so he walked over and asked the coach how to join. In sum, siblings provided information about activities to adolescents directly through their own participation, or indirectly through sharing activity knowledge or environments.

**Promoting behaviors: Role modeling.** Twelve of the 33 adolescents reported that their siblings modeled activity participation (6% of all references; Table 2). Modeling influenced adolescents’ decision to do an activity and to work harder at an activity by showing adolescents what it was like to be able to do something. For example, a girl in Neighborhood C reported that her sister, “makes me like want to draw like her...I see her drawings and sometimes I want to follow with her. [I started drawing] because my sister inspired me and I wanted to draw like her.” Other times, adolescents reported being inspired to continue an activity after observing their siblings modeling how hard work in an

activity or continuing to participate pays off. A boy in Neighborhood A, who regularly worked out with his older brother, reported:

[My brother] runs like more miles than me. He runs 7 miles and I just run 3 because I get really tired. If I run really good, really fast [I'll get better]. He motivates me to keep running, like if I'm really tired and don't want to do it, he just tells me to get up and get on.

Similarly, another girl in Neighborhood A talked about how watching her sister practice softball helped her see how good she could be if she continued to play softball into high school. Role modeling was unique from other promoting behaviors as there were two references in which adolescents discussed themselves being a role model to younger siblings. Overall, role modeling provided adolescents with insight into activities and motivation to join or continue participating in activities.

**Promoting behaviors: Comparisons.** Six of the 33 adolescents talked about how similarities and differences between themselves and their siblings contributed to their activity participation (4% of all references; Table 2). Comparing similarities between themselves and their siblings was a way for participants to understand their activity choice. For example, a boy in Neighborhood A reported that his track coach thought he was fast because his older brother was fast. Other comparisons highlighted differences in activity choice, such a girl in Neighborhood C who compared her musical instrument choice with her sister's choice, stating:

I tried the flute once, but it didn't go so good. I didn't really like it and my sister, she plays the flute too, and she always did better than me, so I went back to learning the violin...I been playing that ever since because I feel like that's what I know how to play better.

Comparisons with siblings were also useful for adolescents to identify the benefits they experienced from activity participation. For example, while reflecting why he decided to take voice lessons, a boy talked about wanting to sing better, by comparing what he wanted to what his brother did. "My brother used to, like, scream. I wanted to sing, not scream. Once in a while I did [singing] in my room and it got to be more important." However, in one case a comparison highlighted a perceived barrier to activity participation. A non-active girl in Neighborhood C compared her shorter stature to her brother's taller stature when reflecting on how playing basketball was not her type of activity but was her brother's type. Thus, comparisons were an important part of adolescents' understanding of their activity participation.

**Promoting behaviors: Co-participation in organized and informal skill based activities.** Adolescents spent time co-participating with their siblings in organized activities (n=10 adolescents, 8% of all references; Table 2) and informal skill based activities (n=17 adolescents, 22% of all references; Table 2). Organized activities occurred in cross-grade school activities (e.g., junior varsity volleyball) and community programs (e.g., neighborhood jujitsu-wrestling gym). Informal skill based activities included practicing sports (e.g., pick up soccer games, bike tricks), doing arts (e.g., drawing, writing poetry), and, in one

reference, a girl made up homework-like assignments for her siblings to do school readiness activities with her.

Co-participation in activities provided opportunities for other promoting behaviors to occur. For example, a boy in Neighborhood A talked about how, when he started skateboarding, his brother acted as a role model and as a supportive figure. The boy reported, “I saw my brother [skating] and was like, oh I can do that,... he taught me what to do and I started doing it and he said I was good.” Co-participation provided opportunities for siblings to trade tips on how to do something. For example, a boy in Neighborhood B who wrote poetry with his sister reported that “she writes in a different way and talks about things I haven’t talked about and she gives me ideas that I can write about.” In another example, a boy who trained jujitsu-wrestling with his older brother at a local gym talked about how they coached each other when one was in a match. Last, adolescents’ participation in activities was related to what other family members did, such as a girl in Neighborhood A who played softball, her sister played softball, and her dad and uncles had played softball. This highlighted how some families might be oriented towards one type of activity over another (e.g., a sports family, an artistic family). Thus, co-participation is not only an avenue for adolescents to spend time with their siblings in an activity they both enjoyed, co-participation also allows for other promoting behaviors to occur and for shared activity identities to emerge.

**Inhibiting behaviors: Babysitting.** Twenty-four of the 33 adolescents reported spending time babysitting their siblings after school (28% of all

references; Table 2). Adolescents who babysat their siblings after school fell into two profiles: (a) intense, regular primary care (n=9 youth) and (b) sporadic, shorter informal care (n= 16 youth).

In the intense profile, adolescents were the primary after school caregivers for their siblings. Adolescents in this profile often talked about how babysitting affected their ability to participate in organized activities by reducing the time available to participate in activities. A girl in Neighborhood B who watched her younger siblings daily reported, “I wanted to be in soccer, but you had to try out first and I couldn’t. ‘Cause I have responsibilities to take care of my brother and sister.” Intense babysitting altered adolescents’ ability to enroll and it altered their ability to continue participating in an activity. A boy in Neighborhood C who dropped out of student council, explained that “since my sister was born, my mom needs more help. So, it’s like I can’t join [activities] or do [student council] anymore ‘cause I need to help my mom.” This primary care of siblings by youth was not always predictable, such as one girl in Neighborhood B who would have to watch her siblings “whenever my mom gets scheduled for a night shift,” making it harder to attend regularly scheduled activities.

In the sporadic profile, babysitting was an unplanned part of adolescents’ after school life. For example, a girl in Neighborhood B reported “taking care of the kids” as one of her chores, “maybe watching them five times, or four times a week, never for more than an hour, just when my parents need to run errands.” Often, adolescents would trade off the responsibility with other family members, such as a girl in Neighborhood A who reported “it’s a team effort...we just pass

[my little brother] around.” In other cases, adolescents would babysit their older sibling’s child. For example, in Neighborhood B a girl reported watching her niece, “every time [my sister] had to go to the doctor or she has an appointment to go to, or I don’t know, maybe some errand...sometimes I would miss practice because of the baby.” The free time of adolescents in the sporadic profile was shaped day to day, limiting planning of scheduled organized activity participation.

**Inhibiting behaviors: Transportation.** Three of the 33 adolescents discussed how siblings affected after-school transportation (1% of all references; Table 2). Siblings might be required to walk home together after school, altering adolescents’ ability to stay for activities. In one case, a brother would take his sister home and then return to his practice. In another case, a girl in Neighborhood B was only allowed to stay for volleyball if her older sister also joined, stating, “My mom said okay. That way we can come walking home together and not by ourselves ‘cause when it ends it’s really late and it gets dark and traffic.” In the other references, adolescents reflected on how transportation sometimes made it more complicated to get dropped off and picked up from activities when their siblings also needed rides places.

**Inhibiting behaviors: Negativity.** Thirteen of the 33 adolescents reported siblings engaged in negative behaviors towards adolescents and their activity (10% of all references; Table 2). Siblings would devalue adolescents’ participation in an activity by commenting that the activity was worthless, teasing, or taunting the youth about liking the activity, or not attending performances or games. For example, a boy in Neighborhood A reported:

It was my last track meet and I told [my brother] you should come. Only my dad came. My brother went to hang out with my cousin and I'm like, ah, wow, he just wanted to hang out when I told him to come. I'm like I've been planning this for a week, I keep telling him every Thursday I have a meet.

This was the same boy who also reported that his brother supported him in his activity, demonstrating how siblings might provide conflicting feedback to adolescents by engaging in both negative and supportive behaviors. Some siblings also directly told adolescents they did not like the adolescent's activity. A girl in Neighborhood A who rode horses recalled, "I watch horse movies 'cuz they're just, I'm obsessed with them. I just love them. My brothers they just put me down and they always say things like horses are dumb." Some negativity was aimed at adolescents' performance in the activity by providing criticizing and unconstructive feedback. A girl in Neighborhood B said that, "when I [drew] something my sister was like 'oh, that is so lame I can do much better.' I got sad and mad...it made me want to quit." In other cases, negative behaviors were more subtle, such as adolescents reporting feeling embarrassed when siblings would misbehave at their games or sad when a sibling would mess up their activity, such as ripping up a drawing they had done.

## **Goal 2: How Behaviors Might Vary by Adolescent, Neighborhood, and Sibling Characteristics**

**Adolescent cultural orientation.** Adolescents were classified into one of four cultural orientations: Low American-Low Mexican, Low American-High

Mexican, High Mexican-Low American, and High American-High Mexican. Six of the 33 adolescents had missing data on cultural orientations and were not included. There were five small to medium effect sizes concerning the differences in behaviors reported across the cultural orientations (Table 3). The adjusted residuals suggest that there were more prominent differences for two orientations compared to the others. Adolescents classified as Low American-Low Mexican were more likely than chance to report co-participation in organized activities and role modeling. These adolescents were also less likely than chance to report co-participation in informal skill based activities. In contrast, adolescents who were classified as Low American-High Mexican were less likely than chance to report co-participation in organized activities and role modeling. These adolescents also reported more negativity than expected by chance.

**Adolescent family-peer orientation.** Adolescents were classified into three family-peer orientation orientations: family is more important, family and friends are equally important, and friends are more important. Six of the 33 adolescents had missing data on family-peer orientation and were not included. There were six small effect sizes concerning the differences in behaviors reported across the family-peer orientation orientations (Table 4). Adjusted residuals suggest that there were more prominent differences for two family-peer orientation orientations. Adolescents who reported family and friends as equally important were slightly more likely than chance to report more comparisons and

less role modeling. Adolescents who reported friends as more important were slightly more likely than chance to report less negativity.

**Neighborhood.** Adolescents were classified based on their neighborhood. There were four small to medium effect sizes concerning the differences in behaviors reported across neighborhoods (Table 5). Adjusted residuals suggest that there were more prominent differences for two neighborhoods. Adolescents in Neighborhood C reported less co-participation in organized activities and more negativity than expected by chance. And, adolescents in Neighborhood A reported more comparisons than expected by chance.

**Sibling gender.** Adolescents were classified as having only sisters, only brothers, or both (Table 6). There were four small to medium effect sizes concerning the differences in behaviors reported across these sibling types. Adolescents with sisters reported more babysitting and transportation than expected by chance. The reference level analysis supported sisters being referenced more for babysitting than brothers, but transportation involved sisters and brothers equally. Adolescents with brothers reported more providing of information and less babysitting than expected by chance. Similar patterns emerged at the reference level. In addition, at the reference level, but not adolescent level, brothers were involved in more references of role modeling and co-participation in organized activities than sisters.

**Sibling birth order.** Adolescents were classified as having only younger siblings, only older siblings, or having both (Table 7). There were six medium to large effect sizes concerning the differences in behaviors reported across these

sibling types. Adolescents with only older siblings were less likely than chance to report babysitting but more likely to report co-participation in organized activities and comparison. Adolescents with only younger siblings were less likely than chance to report support, co-participation in organized or informal skill based activities, and role modeling. Additionally, adolescents with younger siblings were more likely than chance to report babysitting. Parallel patterns of results were found at the reference level.

## **Discussion**

A primary goal of this paper was to facilitate in a conversation about how normative sibling behaviors are part of adolescents' after-school activities. Our findings revealed that siblings engaged in a variety of behaviors that might promote or inhibit adolescents' organized and informal skill based after-school activities. Furthermore, sibling behaviors varied based on key adolescent and sibling characteristics (Figure 1). These results are consistent with and provide support for previous research on sibling relationships and ecodevelopmental theories. In interpreting the findings, we focus on the two main questions: (1) how do promoting and inhibiting behaviors of siblings expand our understanding of expectancy-value model of motivation and (2) why did some behaviors vary by key adolescent and sibling characteristics whereas others did not?

### **Expanding the Expectancy-Value Model to Siblings**

According to the expectancy-value model, adolescents' motivation to engage in after-school activities has been theorized and tested to be predicted by parent behaviors (Figure 1) (Eccles, 1993; Fredricks & Eccles, 2005; Simpkins et.

al., 2011). The current research provides evidence that adolescents report siblings engaging in behaviors promoting activity participation that are similar to parents (e.g., both engage in support, role modeling), and behaviors that were different from parents (e.g., comparisons, providing activity related material). In addition, the results highlight how the expectancy-value model might be used to also examine socialization behaviors that inhibit participation, such as negativity. Implications of these results for informing motivation theory are as follows.

To begin, many behaviors shared similarities with parents' behaviors, such as role modeling, support, and co-participation. However, behaviors shared by parents and siblings are likely complementary, not identical. For example, although parents and siblings might both practice an activity with an adolescent, siblings' co-participation might also include behaviors parents likely cannot do, such as playing in the same band, as a girl in Neighborhood B did. This difference between parent and sibling expression of similar behaviors is also seen in research on homework help; parents emphasized scaffolding when working on the homework whereas siblings emphasized a collaborative learning approach (Gregory, 2001). Thus, adolescent activity participation is likely influenced by the variant forms of the same behavior and the socializer.

The results provide evidence that siblings engage in inhibiting behaviors in addition to promoting behaviors; the current expectancy-value model focuses on promoting behaviors. Whereas promoting behaviors focused on *increasing* adolescent motivation towards participating in an activity, inhibiting behaviors focused on *decreasing* adolescent motivation towards participating in an activity.

In order to participate, adolescents have to decide that the cost of their participation (e.g., the girl who reported being teased about her horseback riding) is less than their desire to participate. Focusing on only promoting behaviors might overlook important inhibiting behaviors that also predict activities. For example, to understand the boy in Neighborhood A's motivation to participate in track, one must look at his older brothers' support behaviors and negativity behaviors. Incorporating inhibiting behaviors strengthens the application of the expectancy-value model to potentially more precisely predict activity participation. And, as inhibiting behaviors were found, it is likely that other socializers, such as parents, also engage in inhibiting behaviors. Research outside of activity participation has found evidence that parents engage in inhibiting behaviors. Research on gender development has found parents actively work to inhibit their child's non-traditional gender related choices, such as actively discouraging what they see as gender inappropriate clothing or toys (Blakemore, 2008). However, to our knowledge, this has not been tested in after-school activities.

The qualitative nature of this study allowed for adolescents to report promoting and inhibiting behaviors occurring concurrently. For example, the girl in Neighborhood C who spent time drawing reported her sister being her inspiration to learn to draw but also being a person who provided negative critiques of her work. Although the expectancy model asserts that multiple behaviors influence motivation (Eccles et. al., 1993), the majority of scholars have studied them through variable-centered approaches (e.g., Fredricks &

Eccles, 2005; Simpkins et. al., 2011). Pattern-centered approaches are often necessary to identify important interactions among behaviors. For example, research on shared delinquency and delinquency-training by siblings suggests that delinquent behavior differs depending on the constellation on positive (e.g., closeness) and negative (e.g., conflict) qualities present in the relationship (e.g., Criss & Shaw 2005).

Last, the expectancy-value model should note that there are important differences within behaviors that might help explain how various outcomes are produced. This is clearly seen in sibling comparisons. If an adolescent compares their activity participation to their sibling's activity and wants to be unique from the sibling, they might be more likely to not engage in the sibling's activity. This was the case of the girl in Neighborhood C who took up the violin after comparing her flute skills with her sisters and finding them lacking. Sibling researchers have coined the term "deidentification" to capture the process of siblings consciously or unconsciously developing niches or personal qualities different from each other (McHale, Updegraff, Shanahan, Crouter, & Killoren, 2005; Whiteman, Becerra, Killoren, 2009). On the other hand, some comparisons seemed to spark adolescents to set goals and alter their behaviors to be similar to their sibling, based on comparisons with their sibling behaviors (for a review, see Whiteman, Becerra, & Killoren, 2009). This was the case for the two brothers who worked out at a gym regularly together, comparing accomplishments and goals. So, although limited by a small sample size, the results suggest critical differences in within behaviors that might result in distinct processes explaining

how a behavior might shape a number of outcomes.

### **When Do Behaviors Vary?**

Following ecological theory, the current study hypothesized that sibling behaviors might vary across three adolescent level characteristics and two sibling level characteristics. Only a limited number of differences in behaviors across characteristics emerged. Below we address what characteristics did show variability in the expressions of the behaviors and why others might have not shown variability.

**Adolescent and neighborhood characteristics.** Unexpected results emerged by adolescents' cultural orientation and family-peer orientation. Behaviors were hypothesized to emerge for adolescents with high American-high Mexican orientation. However, the results suggested that adolescents in the low American-low Mexican cultural orientation reported higher references of co-participation in organized activities and role modeling, whereas adolescents in the low American-high Mexican orientation reported lower references and higher negativity. These unexpected results still might provide support for the importance of cultural orientation being important in specific references. The differences in behaviors occurred when the adolescents' level of adherence to Mexican culture varied but their level of adherence to American culture was low. Thus, enculturation might drive behaviors when coupled with low American orientation, but not high American orientation.

Unexpected results were also found for the degree that adolescents reported the importance of spending time with family compared to friends. High

scores on a measure of family-peer orientation, a Mexican cultural value of the importance of loyalty and support of the family, was hypothesized to be related to siblings engaging in more behaviors with adolescents (Cauce & Domenech-Rodriguez, 2002). Instead, differences in behaviors emerged when adolescents reported friends as equally important or more important than family. This might be due to a shift in with whom adolescents are spending time. For example, negativity from siblings was low for adolescents who reported low family-peer orientation. If adolescents are spending free time with friends and not siblings, siblings might not have opportunities or knowledge of adolescents' activities to engage in negativity. But, when family was more important, co-participation in informal skill based activities was higher than expected by chance. This might be the results of co-participation in organized activities being hard for sibling pairs, as many activities are age or grade restrictive, leading to co-participation in informal skill based activities being a more viable option.

Many expected differences in cultural orientation and family-peer orientation did not emerge. This might be the result of low variability in the sample and in the questions. First, low variability in generation status of the sample might have driven insignificant cultural orientation results. The majority of the sample was second generation adolescents (Table 1). Although acculturation measures (i.e., ARSMA) and generation status are distinct, they are still highly correlated (Phinney, 2006; Schwartz et. al., 2006). Differences in behaviors by cultural orientation might have been attenuated due to shared generation status. Further evidence for this comes from the range in Mexican and

American orientations; the high and low categories were based on a sample mean that was higher than the scale mean. Low Mexican or American orientations in this sample might actually be better represented as a moderate orientation, not present in the current cultural orientation classifications (Arentho-Toth & van de Vijver, 2006; Berry, 2006; Coatsworth, Maldonado-Molina, Pantin, & Szapocznik, 2005). Second, low variability in the family-peer orientation item itself might have driven insignificant results. Family-peer orientation was examined as who the adolescent thought was important to spend time with after school. This might have captured some, but not all, of the important underlying factors of familism (e.g., familism support, obligations, referents; Knight et. al., 2010). A more comprehensive measure of familism might have better categorized the adolescents and distinguished between behaviors.

As hypothesized, there were differences in sibling behaviors between neighborhoods. Co-participation in organized activities was lower than expected in Neighborhood C; this could reflect neighborhood characteristics affecting opportunities for shared activities between siblings. Low income areas tend to have fewer safe organized activities available to adolescents and families in these areas tend to have limited financial resources to enroll their children (Fredricks & Simpkins, 2012; Mahoney, Vandell, Simpkins, & Zarrett, 2009). The opposite of this, more opportunities for and experience with activities in Neighborhood A, might explain the higher comparison references than expected by chance. When both the sibling and the adolescents have opportunities for activities, congruent socialization experiences might facilitate with more comparisons. Also,

adolescents in Neighborhood C reported more sibling negativity than expected by chance. In low income neighborhoods, daily life might simply be harder and more stressful, increasing the risk of negativity in relationships (e.g., McLoyd, 1990). Or, if family financial resources are limited parents might exhibit differential treatment between siblings in when enrolling their children in organized activities (Conley, 2008; McHale et. al., 2005). This might result in increased negativity between siblings surrounding organized activities. However, the majority of the differences between neighborhoods did not emerge. As cultural values, language use, and family income were confounded in this study, not being able to disentangle the factors might have resulted in limited differences in behaviors. For example, Neighborhood C may not have high co-participation due to differences in cultural orientation towards American activities or due to families limited socioeconomic resources.

**Sibling characteristics.** Adolescents in the sample reported significant differences between what behaviors their older and younger siblings exhibited. Older siblings engaged in more organized activity co-participation and comparisons than expected by chance, and tended to engage in more promotive behaviors overall. These differences might be the result of the developmental stage of early adolescence. Older siblings might be particularly important source for promotive behaviors during early adolescence as they might have more experiences with activities than younger siblings. Early adolescence is a key time for developing interest in after-school activities as adolescents are given increasingly more control over choosing to participate in organized activities and

activities begin to become more specialized (Gauvain & Perez, 2005; Mahoney et al., 2006). Adolescents' developing interest might lead them to actively seek older siblings for behaviors surrounding activity participation. However, it is important to note that birth order and age were likely confounded in the current study.

Participants reported that brothers tended to engaged in overall more promoting behaviors than sisters (i.e. co-participation in organized activities, role modeling, and providing information). Research on Mexican origin families has documented parents allowing their sons more freedom than their daughters (Azmitia & Brown, 2000). As many of the promoting behaviors require experience with activities (e.g., role modeling), boys increased freedom might translate into more experience with participating in organized activities; this has yet to be tested. However, participants did report one promoting behavior occurring more with sisters than brothers: support. This suggests evidence fitting with gender socialization perspectives that females are more likely to use supportive interaction styles (Maccoby, 1990). Still, overall sisters engaged in more babysitting and transportation, two inhibiting behaviors, than brothers. This might reflect a gender difference in Latino families' greater concern for their daughters' safety than their sons' (e.g., Raffaelli & Ontai 2004). When engaging in activities, interactions with sisters might be more focused on promoting safety, such as the boy in Neighborhood A who was required to walk his sister home from school before attending activities. And, research has shown that parents rely on daughters more than sons for more day to day family activities, such as

childcare or helping with translations (Valenzuela, 1999). Family dynamics could indirectly reduce the opportunities for sisters to engage in activities or preoccupy their time they are spending with siblings away from behaviors surrounding activities.

### **Future Directions and Limitations**

As the methodology of the study was descriptive, these results provide a framework for future directions in research on siblings and activity motivation. First and foremost, the results need replication with a larger sample and employing a sibling study design. Second, a comprehensive model of how the behaviors are expressed and interact needs to be developed. Third, how the behaviors might differ across development, cultures, and activity characteristics should be explored.

The current results did not benefit from a sibling design. In sibling designs, both the sibling and the adolescent are participants and how processes might differ based on dyadic level dynamics, such as gender constellations or relationship quality, can be examined. The current study only identified patterns of behaviors across all siblings for each adolescent. Focusing on dyads would allow researchers to better pinpoint when behaviors vary. For example, researcher using a sibling design found that siblings spent more time together if they were the same gender or close in age (Updegraff et. al., 2005). Future research should test if siblings who are the same sex and closer in age have more interactions surrounding activities and if these interactions differ compared to other sibling dyads (Brown, Bakken, Ameringer, & Mahon, 2008). As gender

segregation and gender-typing increasing during early adolescents, the gender constellation of the dyad might play a unique role during middle school (Blakemore et. al., 2009). Notably, as many activities are gender typed, examining the gender constellation and the adolescent activity might lead to more information, such as if sisters tend to support feminine activities for their sisters but support both masculine and feminine activities for their brothers. For example, research has shown that in childhood older sisters influence younger brothers to have more feminine interests (e.g. Rust et. al., 2000).

Sibling dyadic research might also be useful in explaining differences in behaviors towards activities due to birth order. Previous research has identified that laterborns might differ from firstborns in sex-typed personal qualities due to an adolescent choosing to become more similar or more different from their sibling (for a review see Blakemore et. al., 2009). Although birth order and age are confounded in the current study, future research should consider how these important dyadic characteristics might be related the expression of behaviors. For example, co-participation might be more common for siblings closer in age while role modeling might be more common for siblings who are spaced farther apart. Last, replication of these results employing a sibling design might also show unique differences in the expression of behaviors by relationship quality or adherence to cultural values. For example, closer, higher quality relationships might lead to more promoting behaviors and congruent adherence to cultural values, such as familism, might lead to more co-participation (e.g., Criss & Shaw, 2005; Howe, Karos, Aquan-Assee, 2011; Thayer, Updegraff, & Delgado, 2007).

The current study provided evidence that promoting and inhibiting behaviors co-occur and that there are important differences within and between behaviors. For example, co-participation in an activity with a sibling often overlapped with other promoting behaviors, such as role modeling, comparisons, and support, and some inhibiting behaviors (i.e., transportation). Researchers should seek to model both promotive and inhibiting behaviors to capture what constellations of behaviors predict activity motivation. Additionally, the relative importance of the behaviors to the adolescent might also be important. When choosing to participate in an activity, adolescents will likely choose the activity with the highest value. This suggests a hierarchy of subjective values of an activity is more important to study than the absolute value (Eccles, 2005). Examining how sibling behaviors affect motivational beliefs and the relative importance of these beliefs to the teenager needs to be explored.

Although the following study provides a laundry list of expected sibling behaviors, it does not address how behaviors might differ across (a) stages and types of activity participation, (b) development, and (c) other cultural values. First, some sibling behaviors might be more important at different stages of participation (i.e., enrollment, participation, and engagement). For example, providing information about activities is likely to be more prevalent and critical during the enrollment stage. Or, co-participation might lead to continued participation if the sibling's co-participation increases adolescent accountability in going to an activity. Learning if sibling behaviors differ across stages of participation would allow activity leaders to increase opportunities for different

sibling behaviors at different time points. Likewise, the current study examined sibling behaviors towards organized activities and informal skill based activities together. Research distinguishing between organized and informal skill based activities, and among activity types (e.g., art, soccer), is needed to understand if behaviors vary by activity.

Second, this study examined how sibling behaviors were part of seventh graders' activity participation. It is likely that sibling behaviors change as adolescents and siblings transition out of middle school and into high school. For example, more egalitarian sibling relationships during later adolescent might be related to less role modeling (e.g., Tucker, Updegraff, & Baril, 2010; East, 2009). Normative developmental changes in cultural orientation and adherence to cultural values during adolescents might also influence the prevalence of different sibling behaviors (e.g. Sam, 2006). Last, the current study only examined the Mexican cultural value of familism using a proxy variable of family-peer orientation. Other important Mexican cultural values, such as adherence to traditional gender roles or religiosity, might influence activity related behaviors (e.g., Cauce & Dominguez, 2002; Knight et al., 2010). Likewise, additional studies might consider how cultural values of non-Mexican samples are part of the current behaviors or identify new behaviors.

### **Applied Implications**

A recent policy report by *Child Trends* provided a set of tips for out of school program providers to attract and retain immigrant, Latino youth (Valladares & Ramos, 2011). Some of their recommendations resonate with this

study and provide insight into how to implement their recommendation. For example, they called for programs to be culturally sensitive. As co-participation in informal skill based activities was higher for adolescents who preferred spending time with family after-school (i.e., higher adherence to family-peer orientation), structuring programs to allow for family participation or multiple siblings might be a culturally sensitive tactic. Indeed, adolescents who reported co-participation with their siblings were exclusively in community or school activities that allowed for cross-age participation. Additionally, the report called for language and communication barriers to be addressed. The current results suggest that siblings have acted as sources of information about activities and can likely be used as a conduit for information when there are language barriers. Activity personal might also work to structure their activities to increase promotive behaviors, such as having family days at the activity to provide opportunities for support, and reduce inhibiting behaviors, such as coordinating to end activities at the same time or share activity spaces so as to simplify transportation resources needed to get multiple siblings home after activities.

## **Conclusion**

Participation in positive after-school activities is important for the development of all youth. The current research suggests that sibling relationships are important to consider for adolescents' activity participation. Applying an expectancy value model and ecological framework, the current paper provides preliminary knowledge of how siblings might promote and inhibit Mexican origin adolescents' activity participation. Promoting behaviors, such as role modeling,

occurred independently and simultaneously with other promoting behaviors (e.g., co-participation) and inhibiting behaviors (e.g., negativity), highlighting the complexity of sibling interactions. Inhibiting behaviors modeled how siblings might decrease adolescents' activity motivation. In addition, these behaviors differ by adolescent and sibling characteristics. Thus, when considering the out of school time of youth, it is important to recognize that adolescents activities are nested within a family unit that provides various types of socialization might vary based on adolescent and sibling characteristics.

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Table 1

*Participant Demographic Information*

	Neighborhood A	Neighborhood B	Neighborhood C
	<u>Neighborhoods</u>		
Median family income	\$66,000	\$33,000	\$31,000
% of school Hispanic	16%	88%	91%
	<u>Parents</u>		
Median Education	Some College	Some High School	Some High School
Language			
English interview	9	5	2
Spanish interview	1	7	10
First Generation <sup>a</sup>	3	10	10
Median family income	\$50,000-\$59,999	\$20,000-\$29,999	\$10,000-\$19,999
	<u>Adolescents</u>		
Gender (n female, n male)	6, 4	6, 6	6, 6
Language preference (n)			
Bilingual	1	6	9
English only	9	4	2
Spanish only	0	2	1
Generation status (n)			
First	1	3	0
Second	2	8	11
Third	7	1	1
Cultural Orientation			
High American-High Mexican	4	6	1
Low American-High Mexican	0	0	4
High American-Low Mexican	4	1	0
Low American-Low Mexican	1	4	3
Familism			
Family more important	4	4	5
Family and friends important	1	1	2
Friends more important	3	5	3
Mean age in years	12.50	13.00	12.50

*Note.* <sup>a</sup> parent generation status was only distinguishable as first or non-first generation.

Table 2

*Promoting and Inhibiting Behaviors*

<b>Behavior</b>	<b>Description</b>	<b>Participants N=33</b>	<b>References N=305</b>	<b>Examples</b>
<b>Promoting behaviors</b>				
Support	Encouragement, appraisal, companionship, informational-instrumental	14 (42%)	51 (17%)	<ul style="list-style-type: none"> <li>• Saying teen did well</li> <li>• Helping teen practice</li> <li>• Telling teen to keep trying</li> <li>• Providing advice</li> </ul>
Provider of information	Direct and indirect Information	7 (21%)	14 (5%)	<ul style="list-style-type: none"> <li>• Telling teen about activities they have seen</li> <li>• Sibling having done same or similar activity</li> </ul>
Role modeling	Benefits, skills and examples of behaviors and commitments	12 (36%)	17 (6%)	<ul style="list-style-type: none"> <li>• Allowing teen to observe what activity is like and how to do it</li> <li>• Talking with teen about their experience</li> </ul>
Comparison	Similarities and differences	6 (18%)	11 (4%)	<ul style="list-style-type: none"> <li>• Perceived teen and sibling ability, physical (e.g., taller) or ability (e.g., draws better)</li> </ul>
Co-participation	Motivation, teaching, family traditions	10 (30%) organized 17 (52%)	23 (8%) organized 68 (22%)	<ul style="list-style-type: none"> <li>• Writing and critiquing poems</li> <li>• Playing on same</li> </ul>

		informal	informal	volleyball team
<b>Inhibiting behaviors</b>				
Babysitting	Intense or sporadic	24 (73%)	86 (28%)	<ul style="list-style-type: none"> <li>• Watching siblings every day</li> <li>• Watching a niece when an older sibling has an errand</li> </ul>
Transportation	Safety, availability	3 (9%)	4 (1%)	<ul style="list-style-type: none"> <li>• Going home after school together</li> <li>• Driving siblings between activities</li> </ul>
Negativity	Devaluing, disrespecting, interruptions	13 (39%)	31 (10%)	<ul style="list-style-type: none"> <li>• Saying teen's activity is dumb</li> <li>• Tearing or messing up teen's work</li> </ul>

Table 3

*Behaviors by Adolescent Cultural Orientation*

	Low American- low Mexican N=11	Low American- high Mexican N= 4	High American- low Mexican N=5	High American- high Mexican N=8	Fisher's p value	r <sub>equivalent</sub>
Promoting behaviors						
Support	5 (45%)	1 (25%)	2 (40%)	4 (50%)	0.90	0.00
Co-participation- organized	7 (63%) <sup>b</sup>	0 (0%) <sup>a</sup>	1 (20%)	1 (13%)	0.04	0.46**
Co-participation -informal	4 (36%) <sup>a</sup>	2 (50%)	3 (60%)	6 (75%)	0.48	0.13*
Comparison	2 (18%)	1 (25%)	2 (40%)	1 (13%)	0.74	0.05
Provider of information	3 (27%)	1 (25%)	0 (00%)	2 (25%)	0.79	0.05
Role modeling	6 (55%) <sup>a</sup>	0 (0%) <sup>a</sup>	2 (40%)	2 (25%)	0.28	0.30**
Inhibiting behaviors						
Babysitting	8 (72%)	4 (100%)	3 (60%)	7 (88%)	0.61	0.19*
Transportation	2 (18%)	0 (0%)	1 (20%)	0 (0%)	0.53	0.13*
Negativity	4 (36%)	3 (75%) <sup>a</sup>	2 (40%)	2 (25%)	0.49	0.13*

\*small effect,  $r=.10$ ; \*\*medium effect,  $r=.30$ ; \*\*\*large effect,  $r=.50$ .

<sup>a</sup> adjusted residuals 1.5 to 1.9; <sup>b</sup> adjusted residuals equal to or greater than 1.9.

Table 4

*Behaviors by Adolescent Familism Level*

	Family more important N=13	Family and friend equally important N=4	Friends more important N=10	Fisher's p value	r <sub>equivalent</sub>
Promoting behaviors					
Support	7 (54%)	1 (25%)	3 (30%)	.49	0.12*
Co-participation -organized	2 (15%)	1 (25%)	3 (30%)	.83	0.05
64 Co-participation -informal	7 (54%)	2 (50%)	3 (30%)	.58	0.12*
Comparison	2 (15%)	2 (50%) <sup>a</sup>	1 (10%)	.24	0.19*
Provider of information	2 (15%)	1 (25%)	4 (40%)	.52	0.12*
Role modeling	6 (46%)	0 (0%) <sup>a</sup>	3 (30%)	.29	0.19*
Inhibiting behaviors					
Babysitting	10 (77%)	2 (50%)	8 (80%)	.61	0.05
Transportation	1 (8%)	0 (0%)	0 (0%)	-- <sup>c</sup>	-- <sup>c</sup>
Negativity	7 (54%)	2 (50%)	2 (20%) <sup>a</sup>	.26	0.19*

\*small effect, r=.10; \*\*medium effect, r=.30; \*\*\*large effect, r=.50.

<sup>a</sup> adjusted residuals 1.5 to 1.9; <sup>b</sup> adjusted residuals equal to or greater than 1.9; <sup>c</sup> effect size not computed due to high missing data and small N reporting transportation.

Table 5

*Behaviors by Adolescent Neighborhood*

	Neighborhood A N=10	Neighborhood B N=12	Neighborhood C N=11	Fisher's p value	r <sub>equivalent</sub>
Promoting behaviors					
Support	4 (40%)	6 (50%)	4 (36%)	.83	0.05
Co-participation - organized	4 (40%)	5 (42%)	1 (9%) <sup>b</sup>	.88	0.23*
Co-participation –informal	5 (50%)	6 (50%)	6 (55%)	1.0	
Comparison	4 (40%) <sup>a</sup>	0 (0%)	3 (27%)	.04	0.35**
Provider of information	3 (30%)	2 (17%)	2 (18%)	.76	0.05
Role modeling	4 (40%)	4 (33%)	4 (36%)	1.0	0.00
Inhibiting behaviors					
Babysitting	7 (70%)	9 (75%)	8 (73%)	1.0	0.05
Transportation	2 (20%)	0 (0%)	1 (9%)	.18	0.23*
Negativity	3 (30%)	3 (25%)	7 (64%) <sup>b</sup>	.14	0.23*

\*small effect,  $r=.10$ ; \*\*medium effect,  $r=.30$ ; \*\*\*large effect,  $r=.50$ .

<sup>a</sup> adjusted residuals 1.5 to 1.9; <sup>b</sup> adjusted residuals equal to or greater than 1.9.

Table 6

*Behaviors by Sibling Gender*

	Adolescent level			Fisher's p value	$r_{\text{equivalent}}$	Reference level		
	Sisters	Brothers	Both			N	Sister	Brother
	N=7	N=9	N=16				N=99	N=122
Promoting behaviors								
Support	3 (43%)	2 (22%)	8 (50%)	.41	0.23*	51	15 (30%)	21 (42%)
Co-participation –organized	2 (29%)	4 (44%)	4 (25%)	.62	0.05	23	3 (13%)	11 (48%)
Co-participation- informal	4 (57%)	3 (33%)	9 (56%)	.64	0.05	68	23 (34%)	30 (44%)
Comparison	2 (29%)	3 (33%)	2 (13%)	.46	0.05	11	3 (27%)	3 (27%)
Provider of information	1 (14%)	4 (44%) <sup>b</sup>	2 (13%)	.20	0.30**	14	1 (7%)	9 (64%)
Role model	2 (28%)	4 (44%)	6 (38%)	.90	0.05	17	6 (35%)	9 (53%)
Inhibiting behaviors								
Babysitting	7 (100%) <sup>b</sup>	4 (44%) <sup>b</sup>	12 (75%)	.04	0.35**	86	35 (41%)	27 (31%)
Transportation	2 (29%) <sup>b</sup>	0 (0%)	1 (6%)	.18	0.30**	4	2 (50%)	2 (50%)
Negativity	4 (57%)	3 (33%)	5 (31%)	.56	0.05	31	11 (35%)	10 (32%)

\*small effect,  $r=.10$ ; \*\*medium effect,  $r=.30$ ; \*\*\*large effect,  $r=.50$ .

<sup>a</sup> adjusted residuals 1.5 to 1.9; <sup>b</sup> adjusted residuals equal to or greater than 1.9.

Table 7

*Behaviors by Sibling Age*

	Adolescent level			Fisher's p value	$r_{\text{equivalent}}$	N	Reference level	
	Older	Younger	Both				Older	Younger
	N=5	N=15	N=12				N=103	N= 94
Promoting behaviors								
Support	3 (60%)	2 (13%) <sup>b</sup>	8 (66%) <sup>b</sup>	.01	0.55***	51	27 (53%)	7 (14%)
Co-participation –organized	4 (80%) <sup>b</sup>	2 (13%) <sup>b</sup>	4 (33%)	.02	0.45**	23	9 (40%)	6 (26%)
Co-participation- informal	3 (60%)	5 (33%) <sup>b</sup>	8 (66%) <sup>b</sup>	.20	0.30**	68	28 (42%)	20 (30%)
Comparison	3 (60%) <sup>b</sup>	1 (6%)	3 (25%)	.05	0.35**	11	4 (36%)	1 (9%)
Provider of information	2 (40%)	3 (20%)	2 (16%)	.72	0.05	14	5 (36%)	5 (36%)
Role model	3 (60%)	3 (20%) <sup>b</sup>	6 (50%)	.15	0.30**	17	12 (71%)	3 (18%)
Inhibiting behaviors								
Babysitting	1 (20%) <sup>b</sup>	14 (93%) <sup>b</sup>	8 (66%)	.01	0.55***	86	9 (10%)	41 (48%)
Transportation	0 (0%)	1 (6%)	2 (16%)	.75	0.05	4	1 (25%)	1 (25%)
Negativity	3 (60%)	5(33%)	4 (33%)	.63	0.05	31	8 (26%)	10 (33%)

\*small effect,  $r=.10$ ; \*\*medium effect,  $r=.30$ ; \*\*\*large effect,  $r=.50$ .

<sup>a</sup> adjusted residuals 1.5 to 1.9; <sup>b</sup> adjusted residuals equal to or greater than 1.9.

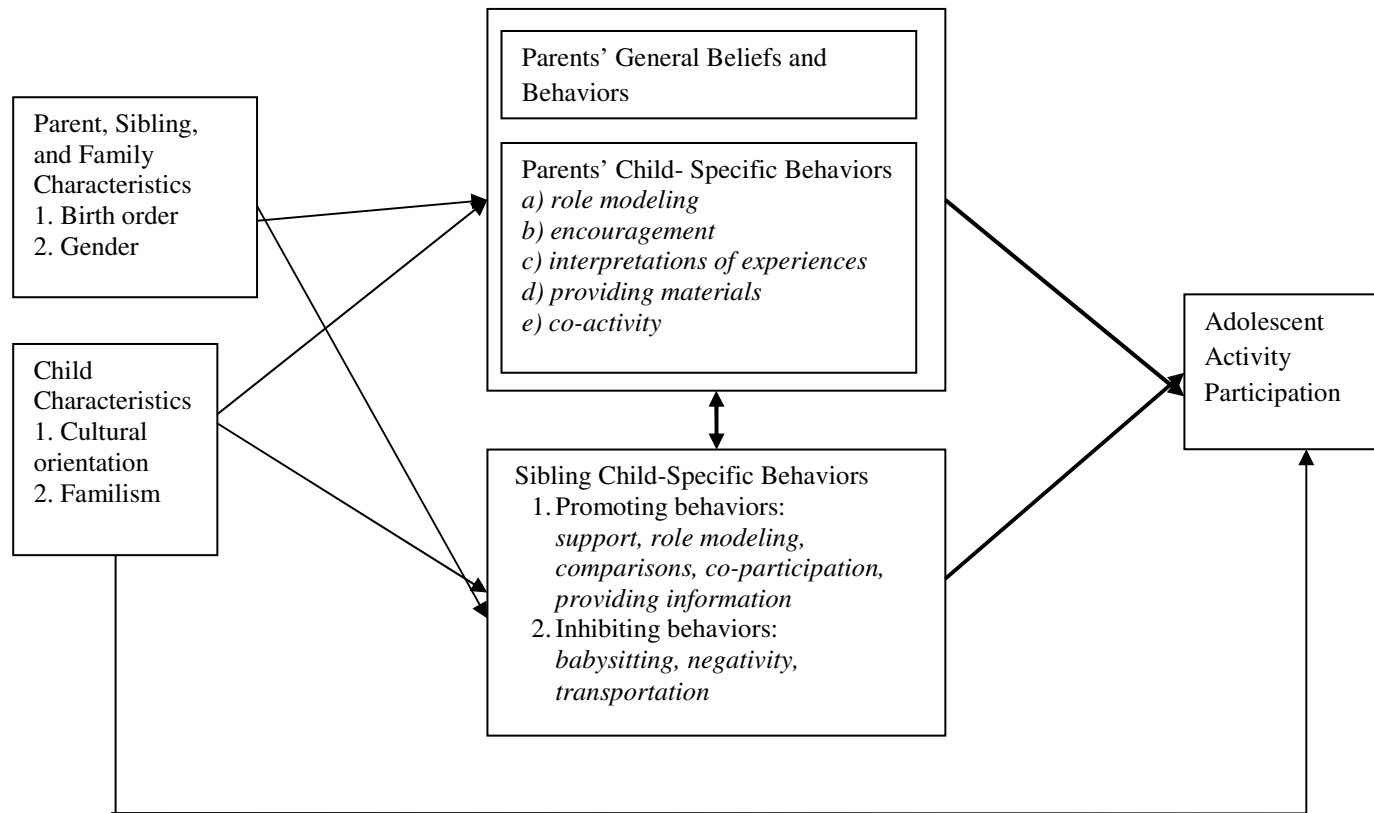


Figure 1. Model of Parents' and Siblings' Influence on Children's Activities (modified from Eccles et. al., 1993)

APPENDIX A  
ABBREVIATED CODING MANUAL FOR SIBLINGS

## ABBREVIATED CODING MANUAL FOR SIBLINGS

### A. Primary Coding: Siblings

This code will capture any talk by the adolescent about their sibling(s), brother(s) and/or sister(s), and how they may affect the adolescent's after-school activities participation directly or indirectly. This includes talk about:

- The siblings' activities, including organized and informal activities, activity preferences and actual participation, and if the sibling(s) do(es) the activity with the adolescent or not.
- Siblings' support of the adolescent, such as helping the adolescent get better, encouraging the adolescent, and going to their games.
- Things siblings said to the adolescent, such as any comments on the adolescents' ability (e.g., he thinks I am good at it) or their participation in the activity.
- How what the siblings say or do impacts adolescents' participation
- If the siblings do something so the adolescent cannot go to an activity. This can include if the adolescent has to babysit siblings or if the family's resources are limited as a result of the sibling(s).
- If siblings discourage participation, such as saying it is lame, that the adolescent is not good at it, or takes the adolescents' activity supplies.

### B. Secondary Coding: Sibling Behaviors

The goal of these sub-codes is to further categorize the sibling text coded above. Text can be coded for one than one sub-code.

- 1) Babysitting: When the target adolescent has specific responsibility over a sibling or cousin or when a sibling or cousin has a specific responsibility over the adolescent.
- 2) Shared Informal Activity: Co-participation from the target adolescent and siblings or cousins in an informal, skill-based activity. This includes reading, working on cars, drawing, sports, pick-up games, or bike riding.
- 3) Role Model / Modeling: Beliefs or aspirations of the target adolescent to model sibling or cousin behavior/activity or sibling or cousins modeling the adolescent's behavior/activity.
- 4) Co-Participation: The sibling or cousin participates with the target adolescent in an organized activity.
- 5) Provider of Information: The sibling or cousin acts as a provider of information for the adolescent or parent. Because of the sibling/cousin's experience or participation, it influences the target adolescent's experience or participation.
- 6) Support: When the target adolescent exhibits support for his/her siblings or cousins OR when a sibling or cousin exhibits support for the adolescent. Also code for the reference where there is a "lack of" support.
- 7) Negativity: Any sort of discouragement, insult, conflict, or negative behavior between the target adolescent and a sibling or cousin.

- 8) Comparison: Beliefs or actual comparison between sibling or cousin and the target adolescent from either the parent or adolescent. This is separate from when the parent or child compares what the siblings are allowed to do (coded as parenting), and instead captures a belief or perception about differences.