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A Comparison of Hobbies and Organized Activities Among Low Income Urban Adolescents

Davia Steinberg, M.A., Valerie Simon, Ph.D.

Wayne State University, Department of Psychology & Merrill Palmer Skillman Institute, 5057 Woodward Ave., Detroit, MI 48202 USA

Abstract

Objectives—Youths' participation in organized activities has been repeatedly associated with better psychosocial adjustment. However, youth living in more disadvantaged contexts (e.g., lower-income, dangerous neighborhoods) have less access to organized activities. The current study aimed to compare hobbies and organized activities, in terms of their accessibility and associations with social functioning with peers, using a social ecological framework. We also examined the conditional effects of family and neighborhood disadvantage for the associations between activity engagement and peer functioning.

Methods—Participants were 91 predominantly African American, urban-dwelling middle school girls ($M_{age} = 12.43$) and their primary caregivers. Dyads completed separate interviews and questionnaires on activity engagement, family and neighborhood disadvantage, and social functioning with peers.

Results—Results suggest that hobbies are a distinct facet of activity engagement that might be more widely accessible than organized activities. Greater involvement in hobbies and organized activities showed unique associations with indices of better peer functioning. Moreover, some of these associations were stronger for youth living in more disadvantaged contexts.

Conclusions—This study advances the understanding of an important yet neglected topic within the adolescent development literature on activity research, namely differential access to opportunities among ethnic minority youth. Results suggest that hobby engagement is an important aspect of activity engagement with social benefits, especially for youth living in more disadvantaged contexts. Further investigation is warranted to understand the range of potential benefits of youths' hobby involvement.

Keywords

early adolescence; activity engagement; neighborhood disadvantage; low income; peer functioning

The ways youth spend their time outside of school or work (i.e., discretionary time) have important implications for psychosocial adjustment. Less structured discretionary activities,

Corresponding author: Davia B. Steinberg, Wayne State University, Department of Psychology & Merrill Palmer Skillman Institute, 5057 Woodward Ave., Detroit, MI 48202 USA, fo5234@wayne.edu.

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such as watching television, playing video games, and hanging out with peers in unstructured environments are associated with behavior problems and poor academic performance (Lobel, Engels, Stone, Burk, & Granic, 2017; Meece, Pettit, Mize, & Hayes, 1998). In contrast, participation in organized activities is associated with indicators of positive psychosocial adjustment, including increased academic attainment, decreased mental health issues, decreased delinquency, increased social skills, and enhanced self-esteem (Bohnert, Kane, & Garber, 2008; Darling, 2005; Farb & Matjasko, 2012; Fredricks & Eccles, 2008; Mahoney, 2000; Mahoney, Cairns, & Farmer, 2003). However, surprisingly few studies examine the psychosocial benefits of other types of activities, such as hobbies, that have the potential to enrich youths' lives and well-being (Csikszentmihalyi, 1997; McHale, Crouter, & Trucker, 2001). Such activities may be especially important for youth who face barriers to organized activity participation due to family or neighborhood disadvantage.

Positive Youth Development theorists characterize organized activities as contexts that enhance youths' ability to successfully navigate emotional, cognitive, social, and behavioral tasks at different developmental stages (Mahoney et al., 2003; Ramey & Rose-Krasnor, 2012). Hobbies, although less studied, have been similarly described as promoting positive development through cultivating youths' "islands of competence" or unique areas of strength and competence (Brooks, 2005). These age-salient competencies are viewed as critical to youths' resilience in the face of adversity (Brooks, 2003; Masten & Coatsworth, 1998). Fergus and Zimmerman's (2005) resiliency model posits that the number of resources or assets one has can buffer against an individual's risk for maladaptation. Assets are positive factors internal to the individual (e.g., self-efficacy, emotion regulation), while resources represent strengths from sources external to the individual (e.g., social support). Organized activities and hobbies have the potential to enhance both youth's assets (e.g., enhanced skills, improved emotion regulation) as well as resources (e.g., connecting youth with peers and adults), which might be especially important for youth from lower-resourced families and neighborhoods.

Organized activities are rule-guided and defined by regular participation, adult supervision, and an emphasis on skill-building (Bohnert, Fredricks, & Randall, 2010). A number of activities meet this definition and have been studied including sports, performing arts, academic clubs, and volunteering. Like organized activities, hobbies are characterized by consistent engagement in skill-building or mind-enriching activities that are pursued for enjoyment (Stebbins, 1982) such as arts and crafts, cooking, reading, and pick-up sports. Less structured discretionary time, such as watching television, playing video games, and hanging out with peers were not included in our definition of hobbies, as they have been not been linked to positive youth development.

The shared components of organized activities and hobbies suggest that each may offer opportunities for youth to explore and cultivate areas of strength and competence (Brooks, 2003). Both build skills and can be done with peers, thereby providing contexts for self-efficacy, social competence, and establishing mutual interests with peers. Hobbies, however, also lack certain features of organized activities that might be crucial to promoting positive development. Whereas organized activities are structured and supervised, hobbies vary along

these dimensions. With data linking lack of adult supervision and structure to risk for delinquency (Aizer, 2004), it is important to know whether hobbies may fare similarly to these unstructured and unsupervised activities. Further, hobbies might not connect youth to adolescents or adults outside of their existing social networks to the degree that organized activities do. Research is needed to clarify whether hobbies confer similar benefits as organized activities.

Number of activities is an index of engagement that can be comparably measured across organized activities and hobbies. Although some debate exists about the optimal measurement of organized activity engagement (e.g., number, breadth, intensity, duration), number of activities has been widely studied in relation to organized activities and positive adjustment, and might be a particularly salient metric in early adolescence (Bohnert et al., 2010; Fredricks & Eccles, 2006). For example, a wider array of activities promotes well-rounded development by cultivating multiple skill sets and exposing youth to a wider array of peers and adults (Busseri & Rose-Krasnor, 2009). The underlying construct of number of activity contexts is also captured by measuring activity breadth (e.g., sum of the number of activity types), and the two metrics are highly related (Bohnert et al., 2010). However, unlike organized activities, where categories of activity types are well established (e.g., sports, performing arts), hobbies have no established categories of activity types.

A potential advantage of hobbies over organized activities is their relative accessibility. Many hobbies are low-cost or without the fees required for organized activities. This may be especially important for youth who may be less likely to participate in organized activities, such as those from lower-income families and more dangerous neighborhoods (Coulton & Irwin, 2009; Quane & Rankin, 2006). Literature linking ecological systems to developmental outcomes (Bronfenbrenner, 1979; Coll et al., 1996) emphasizes the importance of examining how family and neighborhood characteristics impact a child's development. Identifying characteristics that may restrict participation is important to pinpointing actionable targets for reducing inequitable access.

Limitations in family resources, such as income, transportation, time, or parental buy-in may constrain youths' opportunity to engage in organized activities, though it is unknown whether such limitation impede hobby engagement (Covay & Carbonaro, 2010; Quane & Rankin, 2006). Although less studied than family disadvantage, *neighborhood disadvantage* might also present obstacles to youth participation in organized activities, especially within urban environments where crime rates are often higher or public school resources more limited (Posner & Vandell, 1999; Smith, 1997). Sociological research highlights the salience of multiple facets of neighborhood disorder for wellbeing, which not only include factors that tap dangerousness (e.g., violent crime, gang fights, gunshots), but also other markers of neighborhood disorder such as unemployment, public drinking, and homelessness (e.g., Ross & Mirowsky, 2001).

The significance of participation barriers is underscored by the benefits of activity engagement for social competence. Considerable cross-sectional and longitudinal data links organized activity involvement to a number of indices reflecting social functioning with peers, including enhanced interpersonal competence, quality of friendships, and social skills

(Durlak, Weissberg, & Pachan, 2010; Fredricks and Simpkins, 2013; Mahoney et al., 2003). During early adolescence, marked transformations in youths' interpersonal worlds underscore the salience of both social skills and relationship quality to positive development (Allen, Chango, & Szewedo, 2014; Laursen & Collins, 2011). For example, peer networks expand and operate increasingly outside the auspices of adults (Veenstra & Dijkstra, 2011). Close dyadic relationships, such as those with same-sex friends, become increasingly intimate in terms of support and conflict (Hafen, Laursen, & Delay, 2012; Furman & Buhrmester, 1992; Laursen & Pursell, 2009). Accordingly, peer functioning during early adolescence is multi-faceted and can be indexed by social competence (i.e., ability to initiate and maintain peer relationships), prosocial behavior (e.g., voluntary behavior that helps others), and the quality of dyadic relationships with close friends.

Research on the benefits of hobbies is sparse and the relationship between hobbies and peer functioning is unclear. Hobbies are typically studied within the broader discretionary time literature where they are grouped within varying categories of discretionary time. When hobbies are lumped with casual leisure activities, such as socializing and watching television, they are usually related to poorer outcomes (Bohnert, Richards, Kolmodin, & Lakin, 2008). However, when hobbies are operationalized to include only activities that are captivating, complex, and challenging, participation has been associated with fewer symptoms of depression and higher levels of subjective well-being (McHale et al., 2001). Additionally, there is some evidence that participating in unstructured activities such as hobbies might be at least as beneficial for peer functioning than structured activities like organized activities. For example, one study found that engaging in unstructured, but not structured, activities with other children was related to enhanced social skills among youth with intellectual and learning disabilities (Brooks, Floyd, Robins, & Chan, 2015). The authors interpreted this finding to suggest that unstructured activities allow children more flexibility in practicing social behavior. Additionally, they highlighted that unstructured activities offer a unique context for creating collaborative social environments, whereas organized activities typically unite peers in the service of competition. Even when hobbies are solitary activities, these activities build skills that have been shown to be important to the peer functioning, such as emotion regulation, mindfulness, and self-esteem (Dekeyser, Raes, Leijssen, Leysen, & Dewulf, 2008; Lopes, Salovey, Côté, Beers, & Petty, 2005). Taken together, these findings underscore the need to better understand the benefits of hobbies for peer functioning and the potential for hobbies to promote positive youth development.

Furthermore, it is important to consider the context of family and neighborhood disadvantage when examining outcomes for organized activities and hobbies. Youth from more disadvantaged families and neighborhoods tend to participate less in organized activities but reap greater benefits than their more advantaged peers (Fredricks & Eccles, 2008; Richards et al., 2004). A resilience perspective suggests that the competency building aspects of activity involvement may be especially important for youth who, by virtue of living in disadvantaged contexts, might be at greater risk for exposure to factors that can compromise psychosocial functioning (e.g., under-resourced schools, community violence, family distress; Cauce, Cruz, Corona, & Conger, 2011). For example, organized activities might provide youth from disadvantaged families and neighborhoods support from non-related adults, structure, or social support from peers that might otherwise be lacking

(Fredricks & Eccles, 2008). Although there is not parallel research on hobbies, the structure and skill building components of hobbies might also be important for youth living in disadvantaged contexts.

Both family and neighborhood contexts have been shown to moderate associations between organized activity participation and psychosocial functioning. Within studies of *family disadvantage*, organized activity participation is more strongly associated with better psychosocial adjustment for youth from lower than higher income families (Fredricks & Eccles, 2008; Marsh & Kleitman, 2002). In one of the few studies examining peer functioning, Fredricks and Eccles (2008) found that participation on middle school sports teams was positively associated with having friends who did well in school and attended religious activities for adolescents from lower but not higher SES families. Research on *neighborhood disadvantage*, although limited, suggests that it also exerts conditional effects on psychosocial adjustment (Bohnert, Richards, Kohl, & Randall, 2009). Most findings suggest that associations between activity involvement and psychosocial adjustment are stronger for adolescents from more versus less disadvantaged neighborhoods (e.g., Richards et al., 2004; Urban, Lewin-Bizan, & Lerner, 2009).

Few studies have made concerted efforts to disentangle the effects of race, family disadvantage, and neighborhood disadvantage, as the majority of organized activity research has examined white, middle-class students (Fredricks & Eccles, 2006). There is evidence that ethnic minority youth of various income levels benefit from activity involvement (Bohnert, Richards, et al., 2008; Quane & Rankin, 2006). Among studies including both African-American and Caucasian youth, race often moderates the relationship between organized activity participation, with African American youth showing more beneficial outcomes after controlling for income or SES. Nonetheless, it is difficult to discern the unique contributions of family and neighborhood disadvantage in the relations between activity participation and psychosocial adjustment for ethnic minority youth from the extant literature. Contributing to the lack of clarity is that ethnic minority youth are over-represented in these two distinct but interrelated ecological systems (American Psychological Association, 2007). Studies of specific ethnic groups, especially those that are over-represented in low income populations or disadvantaged neighborhood, could help to further disentangle extant findings relating to race and income.

The intersection of gender is also important to consider. Although most studies of activity involvement include mixed gender samples, there is evidence that males and females participate in different activities. For example, a longitudinal study of urban, low-income 3rd to 5th graders found that girls spent seven times less of their afterschool time in coached sports than boys (Posner & Vandell, 1999). Similar findings are reported among adolescents, with females being less likely to participate in sports and less likely to engage in moderate to vigorous physical activities than males (Klinker et al., 2014; Pedersen, 2005). Furthermore, there is some evidence that males and females derive differential benefits from involvement in organized activities indicating there might be differential mechanisms and risks for males and females (Barber, Eccles, & Stone, 2001; Fredricks & Eccles, 2008; Randall & Bohnert, 2012). Early adolescence can also be a vulnerable time in female development, as evidenced by rising rates of interpersonal stress, depression, and self-harm during this time (Vander

Stoep, McCauley, Flynn, & Stone, 2009). For example, by mid-adolescence, rates of depression for females are two times higher than males (Ge, Natsuaki, & Conger, 2006; McGee et al., 1990). Thus, studying access to and involvement in organized activities in a sample of middle school girls in early adolescence is important.

The purpose of the present study was to examine organized activity and hobby engagement for their relative accessibility and benefits to social functioning with peers among a predominantly African American sample of young adolescent girls from an urban community. Our first aim was to assess whether participation in hobbies was less dependent on family and neighborhood advantage than organized activities. We hypothesized that higher levels of contextual disadvantage would be associated with less involvement in organized activities but unrelated to hobbies. Beyond accessibility, our second aim was to evaluate whether participation in organized activities and hobbies were associated with social functioning with peers. We hypothesized that greater involvement in organized activities and hobbies would each be related to better interpersonal skills and higher quality relationships, but that these associations would differ by level of family and neighborhood disadvantage. Specifically, we hypothesized that activity involvement would be more strongly associated with better peer functioning among youth living in contexts of greater disadvantage.

Method

Participants

Participants included 91 female middle school students ($M_{\text{age}} = 12.43$ years, $SD = 1.14$) and their primary caregivers (90% biological mothers) who participated in a longitudinal study of psychosocial development in early adolescence. Consistent with the demographics of the urban community from which the sample was recruited, the majority of participants identified as African American (80.2% African American; 15.4% White; 2.2% biracial; 1.1% Indian/Alaskan Native; and 1.1% Middle Eastern). Median annual household income for the sample was \$25,500, with 53% of caregivers reporting incomes below this median and 58% reporting family size adjusted incomes that would qualify them for Medicaid services (below 138% of the below the poverty level; U.S. Centers for Medicare & Medicaid Services, 2018). Fifty-eight percent of families had 1–2 children in the home, and 42% had 3 or more. Caregivers' educational level varied, with 24% reporting at or below a high school degree/equivalency, 46% some college, and 30% a Bachelor's or Master's degree. Just over half of caregivers were single (57%), meaning that they were not married or living with a partner.

Procedure

The institutional review board at the university where the research was conducted approved all study measures and procedures. Participants were recruited through the distribution of study flyers in community organizations, charters schools, and on bulletin boards throughout a large Midwestern city. Caregivers who contacted our research lab were first screened for eligibility criteria: non-pregnant, normally developing nulliparous females between the ages of 10–15 and currently in middle or junior high school, with a primary caregiver who was a

legal guardian. Eligible caregivers received a \$10 gift card for spending 15 minutes to learn about the study. Of the 96 eligible caregivers who inquired about the study, 91 caregiver-youth dyads agreed to participate and were scheduled for a 3.5-hour lab visit. Transportation assistance was provided as needed. Upon arrival, trained research staff obtained written consent and assent and met separately with caregivers and youth to complete face-to-face interviews and structured questionnaires. The current study includes data provided by caregivers and youth at the baseline assessment, for which caregivers received \$50 cash and youth received a \$50 gift card.

Measures

Activity Engagement—Engagement in organized activities was assessed using the Organized Activity Inventory (OAI; Randall, Bohnert, & Travers, 2015). We added a set of parallel items to the OAI to assess hobby engagement. The OAI queries different indicators of activity involvement over the past year including the total number of activities participated in, frequency of participation (e.g., how many hours per week did you participate), duration of involvement (e.g., how long have you been participating in this activity), and supervision of youths' activities (e.g., does an adult sometimes or always supervise this activity). Activities that met the criteria of regular participation (at least once a month), adult supervision, and a focus on skill building or teamwork were counted as organized activities. We classified hobbies as other activities that were regularly engaged in and were skill-building, or mind-enriching (e.g., reading, cooking, pick-up sports). Activities like watching television or playing videogames were not included as hobbies. Primary caregivers completed our adapted OAI first, and then their responses were then independently reviewed by youth to verify participation and level of involvement. We used the total numbers of organized activities and hobbies as indices of activity involvement.

Family Disadvantage—Following previous work recommending cumulative versus individual indices of demographic risk (Sameroff, Seifer, Baldwin, & Baldwin, 1993), we created a cumulative index of family disadvantage from five caregiver-reported characteristics relevant to accessing activities as well as youth psychosocial functioning: (1) parent education (0 = more than a high school degree, 1 = a high school degree or less); (2) caregiver's partner status (0 = living with partner/spouse, 1 = not living with partner/spouse); (3) number of children in the home (0 = 1–2 children including youth participant, 1 = 3 or more children); (4) income (0 = above 138% of the poverty line, 1 = at or below 138% of poverty line) and; (5) family disorganization (0 = below sample median, 1 = above sample median). These five indicators were summed to produce a cumulative family disadvantage score ranging from 0–5, with higher scores denoting greater disadvantage.

Family disorganization was assessed via caregiver report on the 15-item Confusion, Hubbub, and Order Scale (CHAOS; Matheny, Wachs, Ludwig, & Phillips, 1995). Caregivers respond true or false to a series of home environment descriptions (e.g., "It's a real zoo in our home"). Items are averaged to create a total score that can range from 0 to 1, with higher scores denoting greater disorganization. Internal consistency of the CHAOS in the current sample was acceptable ($\alpha = .82$) and consistent with published data (Matheny et al., 1995). For this study, CHAOS scores were divided by median split to create dummy codes for the

cumulative family disadvantage index, with 51% of the sample scoring above the median (scored as '1') and 49% below (scored as '0').

Neighborhood Disadvantage—Neighborhood disadvantage was assessed by caregiver report on the 15-item Perception of Neighborhood Scale (Wu et al., 2005). Each item taps a specific neighborhood problem (e.g., “vandalism”, “youth gang fights”, “litter and trash”, and “gunshots fired”), and respondents rate the extent of that problem in their neighborhood on a 4-point scale ranging from “not a problem at all” (scored as '0') to “a very serious problem ('3'). Total scores were created by averaging the items, such that possible scores ranged from 0–3, with higher scores denoting more serious neighborhood disadvantage. The measure showed good internal consistency in the current study sample ($\alpha = .94$).

Youths' Peer Functioning—Indices of youths' peer functioning included youth report of interpersonal competence, youth report of positive and negative friendship quality, and caregiver report of youths' prosocial qualities.

Interpersonal Competence was assessed using a 12-item abbreviated version of Adolescent Interpersonal Competence Questionnaire (AICQ; Buhrmester, Furman, Wittenburg & Reis, 1988), which measures youths' perceptions of their interpersonal competence in six domains: initiating relationships (e.g., “How good are you at going out of your way to start up new relationships”), conflict resolution (e.g., “How good are you at dealing with disagreements in ways that make both people happy in the long run?”), seeking support (e.g., “How good are you at seeking comfort when you are troubled about something?”), providing support (e.g., “How good are you at showing you really care when someone talks about personal problems?”), taking charge (e.g., “How good are you at getting people to go along with what you want?”), and companionship (e.g., “How good are you at being the kind of person people enjoy hanging out with?”). For each item, youth rated their perceived competence on a 5-point scale ranging from 1 (“I'm poor at this”) to 5 (“I'm extremely good at this”). Items were averaged to create a mean score where higher scores denoted greater interpersonal competence. The scale showed acceptable internal consistency in the current sample ($\alpha = .80$).

Quality of Close Friendships was measured using a 16-item Network of Relationship Inventory (NRI; Buhrmester & Furman, 2008). The NRI assesses the positive and negative features of youths' important dyadic relationships, including closest same-sex friendships, the focus of the current study. The NRI has two main factors, Positive Interactions and Negative Interactions. Positive Interactions was calculated using the mean of four subscales tapping emotional support (“How often do you turn to this person for support with personal problems?”), companionship (“How often do you spend fun time with this person?”), intimate disclosure (“How often do you tell this person things that you don't want others to know”), and relationship satisfaction within youths' closest same-sex friendships. The Negative Interactions score was derived from the mean of two 3-item subscales tapping conflict (“How often do you and this person get mad at or get in fights with each other”) and criticism (e.g., “How often does this person point out your faults or put you down”). Possible scores for each factor range from 1 to 5, with higher scores indicating more positive or

negative interactions. Subscale reliabilities in the current sample were adequate (subscale α_s from .72 - .85; Positive Interactions $\alpha = .77$; Negative Interactions $\alpha = .77$).

Prosocial Behavior: Caregivers completed the 5-item Prosocial Behavior subscale of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 2001), rating each prosocial behavior (e.g., “considerate of other people’s feelings”) as “not true”, “somewhat true”, or “certainly true” of their child over the past six months. Item scores are summed to create a total scale score that can range from 0 to 10, with higher scores denoting higher levels of prosocial behavior. The SDQ authors report satisfactory internal reliability (mean $\alpha = .73$), and retest stability after 4–6 months for this scale (mean $\alpha = .62$; Goodman, 2001). Cronbach’s alpha in the current sample was .65.

Data Analyses

All primary study hypotheses were evaluated using hierarchical regressions in SPSS 25. To evaluate the relative accessibility of organized activity and hobbies (Aim 1), we computed separate hierarchical regression models predicting involvement in organized activities and hobbies from family and neighborhood disadvantage after controlling for youth age. To assess the additive and interactive effects of activity involvement, family disadvantage, and neighborhood disadvantage on peer functioning (Aim 2), we conducted a series of hierarchical regressions wherein each index of peer functioning was regressed on the activity variable (organized activity or hobbies), the moderators (family and neighborhood disadvantage), and the two interactions between the activity variable and the moderators. Activity and moderator variables were centered prior to analyses. Dependent variables included parent report of prosocial behavior and youth report of interpersonal competence, positive interactions with same-sex friends, and negative interactions with same-sex friend. Age was included as a covariate in all of the Aim 2 models. When the interaction effect was not significant, we report the results of the reduced model (i.e., without the interactions). Significant interactions were probed using the Johnson-Neyman (J-N) technique within the SPSS PROCESS macro (Hayes, 2018). This technique allows researchers to make inferences about the regions of significance of the effect of X on Y; that is, the level of the moderator variable below and above where the effect of interest is present or absent. Whereas traditional methods rely on arbitrary points of low and high levels of the moderator (e.g., $M + 1$ SD), the J-N technique estimates the conditional effect of the independent variable at values of the continuous moderator that correspond to specific percentile scores within the sample distribution of the moderator. Each significant interaction is visualized in a figure of the simple slopes of the association between activity engagement and peer functioning at 3 levels of the moderator: the transition point (when the relationship between activity engagement and peer functioning transition from nonsignificant to significant), a point below the transition point, and a point above the transition point.

Data Screening and Missing Data—Prior to analyses, data were screened for outliers and normality. As recommended by Tabachnick and Fidell (2013), outliers, defined as scores 3 or more standard deviations away from mean, were replaced with next highest/lowest value to minimize bias. A total of six scores (one each for organized activities, hobbies, neighborhood disadvantage, and AICQ; two for NRI negative interactions) were winsorized.

The neighborhood disadvantage and NRI negative interactions scales were positively skewed and transformed using square root and log transformations, respectively. Relatively few data were missing (0 – 6.5% across all variables), and nonsignificant Little's MCAR tests indicated that these data were missing at random. Missing data were imputed using the Expectation Maximization method, which is comparable in accuracy to other methods for imputing data missing at random (Lin, 2010; Mu & Zhou, 2011).

Results

Descriptive Statistics

Almost all girls participated in at least one organized activity (91.2%), and almost as many reported at least one hobby (82.4%). Most (75%) participated in both an organized activity and a hobby, with only 16% participating in only organized activities, and 8% participating in only hobbies. The most common types of organized activities that girls reported participating in were sports (57%; e.g., soccer, softball, cheer, volleyball), academic clubs (39%; e.g., yearbook, chess club), performing arts (29%; e.g., choir, theater, dance), religious activities (27%; e.g., Sunday school), and volunteering (17%; e.g., working at a soup kitchen). The most common types of hobbies reported were music (29%; e.g., playing an instrument, singing), academic hobbies (25%; e.g., reading, writing), sports (23%; e.g., pick-up basketball, bowling, gymnastics, ice-skating, skiing), arts and crafts (21%; e.g., drawing, painting, crafts), baking or cooking (18%), and beauty activities (9%; e.g., doing nails and hair).

Table 1 reports the descriptive statistics and inter-correlations for the primary study variables. Number of organized activities was unrelated to number of hobbies. Measures of peer functioning were largely unrelated, suggesting that they indexed different domains of adolescents' peer functioning. The exception was a positive association between interpersonal competence and positive interaction with same sex friend. As expected, higher levels of family and neighborhood disadvantage were each correlated with lower levels of involvement in organized activities but unrelated to hobbies. Activity engagement was associated with peer functioning. Specifically, greater involvement in organized activities was associated with higher levels of peer functioning across all four outcomes, and greater involvement in hobbies was related to fewer negative interactions with same-sex close friends. Older age was associated with decreased involvement in hobbies as well as lower interpersonal competence, more negative interactions with their same sex friend, and less prosocial behavior (marginally significant, $p=.07$) leading us to control for participant age in subsequent analyses.

Activity Involvement and Associations with Family and Neighborhood Disadvantage

Table 2 presents the results of the hierarchical regressions predicting engagement in organized activities and hobbies from family and neighborhood disadvantage, controlling for age. Family but not neighborhood disadvantage was associated with less involvement in organized activities. As expected, neither family nor neighborhood disadvantage was related to girls' participation in hobbies.

Activity Engagement and Peer functioning

Table 3 shows the results of the hierarchical regressions predicting peer functioning from the main effects of activity engagement and contextual disadvantage (family and neighborhood) and the interactions of activity engagement with contextual disadvantage. Main effects for organized activity involvement emerged for prosocial behavior, interpersonal competence, and positive interactions with same-sex friends, with greater involvement predicting better peer functioning. Family disadvantage moderated the relations between organized activity involvement and prosocial behavior as well as the relationship between organized activities and positive friend interactions. Figure 1 illustrates the interaction with plots of the association between number of organized activities and prosocial behavior for families outside as well as within the region of significance for the interaction. Here it can be seen that greater organized activity involvement was associated with more prosocial behaviors only for girls with approximately 1 or more family disadvantage indicators, which represent the upper 67 percentile of the sample. For those with less than 1 indicator of family disadvantage (the lower 33 percentile of the sample distribution), organized activity participation was unrelated to prosocial behavior. Similarly, Figure 2 illustrates the interaction with plots of the association between number of organized activities and positive interactions with same sex friends for families outside as well as within the region of significance for the interaction. Here it can be seen that greater organized activity involvement was associated with more positive interactions with same sex friend only for girls with approximately 2 or more family disadvantage indicators, which represent the upper 47 percentile of the sample. For those with less than 2 indicator of family disadvantage (the lower 53 percentile of the sample distribution), organized activity participation was unrelated to positive interactions with same sex friend.

Greater involvement in hobbies was associated with fewer negative interactions with same-sex friend. The relationship between number of hobbies and prosocial behavior was conditional upon level of neighborhood disadvantage. Figure 3 illustrates the interaction with plots of the association between number of hobbies and prosocial behavior for families outside as well as within the region of significance for the interaction. Here it can be seen that greater hobby involvement was associated with more prosocial behavior only for girls with ratings of neighborhood problems that, on average, were rated slightly less than “somewhat of a problem”, which represent the upper 35 percentile of the sample. For those with ratings of much less than “somewhat of a problem” (the lower 65 percentile of the sample distribution), hobby participation was unrelated to prosocial behavior. Figure 4 illustrates the interaction with plots of the association between the number of hobbies and interpersonal competence for families outside as well as within the region of significance for the interaction. Here it can be seen that greater hobby involvement was associated with more interpersonal competence only for girls with approximately 4 or more family disadvantage indicators, which represent the upper 25 percentile of the sample. For those with less than 4 indicators of family disadvantage (the lower 75 percentile of the sample distribution), hobby participation was unrelated to interpersonal competence.

Discussion

The current study sought to broaden our understanding of young adolescent girls' activity participation and its associations with peer functioning in four important ways. First, we examined the accessibility and potential benefits of hobbies, a neglected facet of activity engagement. Building upon data highlighting contextual variations in youths' activity engagement and benefit, we examined whether resources in the family or neighborhood ecologies were differentially associated with participation in organized activities and hobbies. In addition, we evaluated the degree to which these interrelated features of youths' social ecology moderated associations between activity engagement and peer functioning. Finally, our focus on peer functioning sheds light on a significant and multi-faceted domain of early adolescent development that includes both social behaviors and relationship quality.

Accessibility and the Importance of Hobbies

Our findings suggest that hobbies represent an important facet of young adolescent girls' activity engagement that is distinct from organized activities. Although the majority of girls participated in both types of activities, the extent of their involvement in each was unrelated, suggesting that hobbies represent a unique domain of discretionary time. Moreover, the two activity types were differentially associated with characteristics of youths' families and neighborhoods. Whereas organized activity participation was related to youth's family and neighborhood disadvantage, participation in hobbies was unrelated to family or neighborhood disadvantage. This finding suggests that hobbies might be more widely accessible than organized activities. Like organized activities, hobbies provide a venue for youth to build discipline and skills in ways that promote competencies, self-esteem, and resilience. While participation in hobbies was unrelated to neighborhood problems, research is needed to examine how ecological assets of neighborhoods, such as the presence of libraries, arts centers, or museums, might shape the number or types of hobbies youth pursue (Urban et al., 2009).

Results linking greater family disadvantage to less participation in organized activities are consistent with prior studies. For example, Covay (2010) examined different aspects of family background and found that lower income, lower caregiver occupational prestige, and less parent education were each associated with less organized activity involvement. The current findings add to this literature to suggest that these and other family factors operate in an additive fashion to decrease youth engagement in organized activities. These family demographics might reflect cumulative strains on time or resources (e.g., transportation, financial, childcare) to coordinate organized activity involvement. Accordingly, youth programs may do well to evaluate the range of obstacles faced by the families they serve and develop accommodations for different types of family strain to reduce overall burden.

Neighborhood disadvantage was related to organized activity participation at the bivariate level but not when considered in the context of family disadvantage. These findings suggest that while neighborhood factors may indeed be a concern (Vandell et al., 2015), family disadvantage may be a stronger correlate of young adolescent girls' organized activity engagement. Alternatively, less disadvantaged families may be better positioned to circumvent neighborhood safety concerns. For example, families with fewer children, a

second caregiver in the home, or more money may be better situated to provide reliable transportation to activities or enroll their children in fee-based activities in more enriched contexts. Additional studies with larger sample size are needed to identify the unique and interrelated aspects of these two ecological systems and their impact of young adolescents' involvement in organized activities. Attention to the relative impact of objective (e.g., availability of activities) as well as subjective (e.g., caregiver perceptions) features of neighborhoods would also help to inform policy and remediation strategies.

Associations with Peer Functioning by Ecological Context

The results for organized activities were largely consistent with prior research pointing to their overarching benefits along with their particular significance for at-risk youth (e.g., Bohnert, Richards et al., 2008; Mahoney et al., 2003). Participation in organized activity engagement was related to youth and caregiver report on three of four indicators of girls' peer functioning (prosocial behavior, interpersonal competence, and positive friendship quality). For prosocial behavior and friendship quality, organized activity participation was associated with more prosocial behavior and more positive interactions with same-sex friends only for youth from more disadvantaged families.

Our findings also highlight the importance of context for understanding the peer-related benefits of hobbies for girls. Independent of context, hobby participation was associated with less conflict and criticism in same sex friendships. However, for girls living in more disadvantaged contexts hobby participation was also associated with higher levels of prosocial behavior and interpersonal competence with peers. This finding parallels the organized activity literature, where researchers have noted stronger links between activity participation and adjustment for youth living in more disadvantaged contexts (Fredricks & Eccles, 2008; Richards et al., 2004). It is also consistent with extant literature on discretionary activities more broadly. For example, Bohnert et al. (2009) found neighborhood danger to be an important consideration when determining which kinds of discretionary time activities are most beneficial for urban African American youth, a population that experiences disproportionate rates of neighborhood disadvantage.

Overall, these findings add to the list of organized activities' potential benefits; however they also raise questions about whether organized activities and hobbies might confer different benefits. In the current study, these two forms of activity engagement were associated with different facets of peer functioning. One explanation for the observed differences might be distinct mechanisms. For example, organized activities might promote peer functioning by connecting them to larger social networks whereas the benefits of hobbies, which are often solitary activities, might benefit youths' peer functioning via other channels, such as providing outlets for personal expression or enhancing emotion regulation. For example, hobbies may function as a distraction for coping with negative mood states (Nolen-Hoeksema & Morrow, 1993) or induce "flow states" associated with enhanced mood, thereby decreasing negative interactions or enhancing orientation towards others (Csikszentmihalyi, 1997). Despite the large literature on organized activities, investigations of mechanisms underlying observed relations are sparse. Our results suggest a need to

identify these mechanisms and variation by activity type, youth characteristics, or contextual factors.

Limitations and Future Directions

Results of this study, which offer promising insights about the potential significance of hobbies and organized activities for peer functioning, should be considered in light of several study limitations. Given the non-experimental and cross-sectional nature of the data, causality for the relationships between activity participation and peer functioning cannot be claimed. Longitudinal research with larger samples is needed to clarify direction of effects over time and control for other explanatory factors, such as the self-selection of more socially skilled youth into more activities. Such work should also attempt to clarify whether there are certain dimensions of hobbies that are more beneficial than others. For example, engaging in hobbies with peers or under supervision may be more strongly associated with peer functioning than more solitary activities. Further, we measured one facet of activity engagement—total number. Although this index allowed for a comparable assessment of engagement in organized activities and hobbies, further research is needed to determine which indices of engagement (e.g., breadth, total number, duration) are most salient for positive youth development. The generalizability of the current findings may also be limited to urban dwelling, African American girls. Additional research on boys' participation in hobbies is warranted to describe and compare engagement and its potential benefits across genders. Girls and boys tend to participate in different activities and show differential patterns of adjustment from participation (Randall & Bohnert, 2012). Similarly, the generalization of the current findings to youth from other racial and ethnic backgrounds warrants investigation. The current findings are salient because African American youth are understudied in the realm of organized activity research (Fredricks & Eccles, 2006) and some research shows that they benefit to a greater extent from organized activity participation than white youth (Randall & Bohnert, 2009). Nonetheless more careful consideration of cultural context should be factored into research examining accessibility, participation, and potential benefits of engagement in organized activities and hobbies.

Our findings add to a growing literature underscoring the significance of youths' social ecologies for their development. Nonetheless, it should be noted that our measurements of ecological factors hypothesized to limit activity engagement were derived from sociodemographic information that served as a proxy for instrumental variables like transportation, or childcare. It is unknown whether caregivers of youth viewed these sociodemographic variables as pertinent to activity involvement or whether other factors might be more important. Although our measure of neighborhood problems did tap caregivers' perceptions, objective measures of the neighborhood environment, such as crime rates or resources also merit investigation.

Findings from this study extend our understanding of young adolescent girls' activity engagement and its potential benefits to peer functioning, an important domain of development in early adolescence, and offer some practical directions for promoting positive youth development. Overall, the results point to the viability of hobbies for girls from families where low resources might limit participation in organized activities. However,

differences in the social correlates of hobbies and organized activities suggest that both types of activity engagement may be important, especially—and sometimes specifically—for girls living in contexts of greater family and neighborhood disadvantage. Increasing supports for girls' engagement in organized activities and hobbies has the potential to be a cost effective, high yield investment. Although additional research is needed to assess other potential benefits of hobbies (e.g., academic, mental health), the observed associations with peer functioning during early adolescence are noteworthy, given the developmental press to establish intimate and egalitarian peer relationships during this time (Larson et al., 1996). Learning to navigate intimacy and conflict across friendships is important for concurrent and later development (Allen et al., 2014; Furman, Dunn, & Young, 2009). The contexts and skills provided by organized activities and hobbies might facilitate these developmental tasks.

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Compliance with Ethical Standards

This study was funded by a grant from the National Institutes of Health to Valerie Simon (HD61230). The authors declare they have no conflicts of interest. The study described received full IRB approval through Wayne State University and the sample was treated in compliance with APA ethical standards. Informed consent was obtained from all individual participants included in the study.

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Figure 1. Family Disadvantage Moderates the Relationship Between Number of Organized Activities and Prosocial Behavior

Note. J-N analyses indicated that the relation between number of organized activities and prosocial behavior transitioned from nonsignificant to significant at 1.19 family disadvantage indicators, corresponding to the 33rd percentile of the distribution of family demographic disadvantage, $b = .17$ SE = .09, $t(84) = 1.99$, $p = .05$.

Figure 2. Family Disadvantage Moderates the Relationship Between Number of Organized Activities and Positive Interactions with Same-Sex Friend

Note. J-N analyses indicated that the relation between number of organized activities and positive interactions with same-sex friend transitioned from nonsignificant to significant at 2.10 family disadvantage indicators, corresponding to the 53rd percentile of the distribution of family demographic disadvantage, $b = .08$ SE = .04. $t(84) = 1.99$, $p = .05$.

Figure 3. Neighborhood Disadvantage Moderates the Relationship Between Number of Hobbies and Prosocial Behavior

Note. J-N analyses indicated that the relation between number of hobbies and prosocial behavior transitioned from nonsignificant to significant when neighborhood disadvantage was rated, on average, as slightly less than “somewhat of a problem” (.67), corresponding to the 65th percentile of the distribution of neighborhood disadvantage, $b = .27$ SE = .14. $t(84) = 1.99$. $p = .05$.

Figure 4. Family Disadvantage Moderates the Relationship Between Number of Hobbies and Interpersonal Competence

Note. J-N analyses indicated that the relation between number of hobbies and interpersonal competence transitioned from nonsignificant to significant at 3.93 family disadvantage indicators, corresponding to the 75th percentile of the distribution of family demographic disadvantage, $b = .12$ SE = .06, $t(84) = 1.99$, $p = .05$.

Table 1.
Descriptive Statistics and Correlations for Independent, Outcomes Variables, and Covariates

	1	2	3	4	5	6	7	8	9
1. OA	1								
2. Fiobby	0.11	1							
3. Neigh Dis	0.30**	0.04	1						
4. Family Dis	0.36**	0.02	0.38**	1					
5. Prosocial	0.37**	0.16	0.21	0.25*	1				
6. Int Comp	0.24*	0.15	0.17	0.01	0.12	1			
7. Pos SSF	0.21*	0.01	0.15	0.17	0.13	0.33**	1		
8. Neg SSF	0.24*	0.26*	0.25*	0.14	0.14	0.19	0.04	1	
9. Age	0.01	0.27*	0.17	0.15	0.19	0.26*	0.13	0.20*	1
N	91.00	91.00	91.00	91.00	91.00	91.00	91.00	91.00	91.00
Mean	2.90	1.90	0.58	2.33	8.54	3.77	3.89	1.58	12.43
St. Dev	2.00	1.32	0.66	1.48	1.56	0.59	0.75	0.58	1.14
Min	0.00	0.00	0.00	0.00	4.00	2.33	2.33	1.00	10.00
Max	9.00	5.00	2.50	5.00	10.00	5.00	5.00	3.33	15.00

Note. OA = Organized Activities; Neigh = Neighborhood; Dis = Disadvantage; Int Comp = Interpersonal Competence; Pos SSF = Positive Interactions with Same Sex Friend; Neg SSF = Negative Interactions with Same Sex Friend.

* $p < .05$

** $p < .01$.

Table 2.

Results of Standardized Regression Models Predicting Organized Activities and Hobbies from Cumulative Family Demographic Disadvantage and Neighborhood Disadvantage

	β coefficient	SE	t	F(df)	Cohen's f^2
Organized Activities					
Intercept	2.40	2.14	1.12		
Age	0.09	0.18	0.90		
Neighborhood Disadvantage	-0.20	0.44	-1.87		
Family Disadvantage	-0.30	0.14	-2.35**		
Full Model	$R^2 = 0.17$			5.98 (3, 87)**	0.20
Hobby					
Intercept	5.76	1.50	3.85**		
Age	-0.27	0.12	-2.58*		
Neighborhood Disadvantage	-0.01	0.31	-0.06		
Family Disadvantage	0.03	0.10	0.24		
Full Model	$R^2 = .07$			2.27 (3, 87)	0.08

Note.

* $p < .05$

** $p < .01$

Table 3.

Results of Standardized Regression Models Predicting Interpersonal Functioning from Activities, Proposed Moderators, and their Interaction, Controlling for Covariates

Organized Activity (OA)					Hobby (Hob)				
	β coefficient	SE	t	F(df)	Cohen's f^2	β coefficient	SE	t	F(df)
Prosocial									
Intercept	11.51	1.68	6.87**			10.59	1.88	5.63**	
Age	-0.20	0.14	-2.05*			-0.10	0.15	-0.92	
OA	0.41	0.09	3.66**			0.14	0.12	1.31	
Neigh Dis	-0.06	0.35	-0.60			-0.13	0.36	-1.22	
Fam Dis	-0.06	0.11	-0.57			-0.16	0.12	-1.46	
OA X Neigh Dis	0.00	0.18	0.02			0.23	0.27	2.20*	
OA X Fam Dis	0.24	0.06	2.11*			-0.07	0.09	-0.59	
Full Model	$R^2 = 0.23$			4.27 (6, 84)**	0.30	$R^2 = .16$			2.66 (6, 84)*
Interpersonal Competence									
Intercept	5.17	0.65	7.95**			4.90	0.72	6.80**	
Age	-0.27	0.05	-2.60*			-0.17	0.06	-1.57	
OA	0.27	0.03	2.50*			0.04	0.05	0.33	
Neigh Dis	-0.11	0.14	-0.95			-0.15	0.14	-1.32	
Fam Dis	0.17	0.05	1.48			0.06	0.04	0.52	
Reduced Model	$R^2 = 0.15$			3.72 (4, 86)*	0.18	-0.03	0.10	-0.23	
						0.23	0.03	2.03*	
						$R^2 = 0.14$			2.27 (6, 84)
									0.16
Positive Interactions with Same Sex Friends									
Intercept	2.86	0.83	3.45**			2.63	0.93	2.84**	
Age	0.13	0.07	1.23			0.18	0.07	1.65	
OA	0.27	0.04	2.33*			0.05	0.06	0.50	
Neigh Dis	-0.09	0.17	-0.84			-0.12	0.18	-1.04	
Fam Dis	-0.10	0.06	-0.85			-0.15	0.06	-1.34	

Organized Activity (OA)						Hobby (Hob)					
	β coefficient	SE	t	F(df)	Cohen's f ²		β coefficient	SE	t	F(df)	Coher
OA X Neigh Dis	0.16	0.09	1.42			Reduced Model	$R^2=0.07$			1.52 (4, 86)	0.08
OA X Fam Dis	0.25	0.03	2.11 *								
Full Model	$R^2=0.18$			3.16(6, 84) **	0.22						
Negative Interactions with Same Sex Friends											
Intercept	-0.09	0.16	-0.54			Intercept	0.02	0.17	0.13		
Age	0.18	0.01	1.74			Age	0.10	0.01	0.95		
OA	-0.20	0.01	-1.78			Hob	-0.23	0.01	-2.18 *		
Neigh Dis	0.17	0.03	1.50			Neigh Dis	0.21	0.03	1.90		
Fam Dis	-0.02	0.01	-0.20			Fam Dis	0.04	0.01	0.34		
Reduced Model	$R^2=0.12$			3.01 (4, 86) *	0.14	Reduced Model	$R^2=0.14$			3.43 (4, 86)	0.16

Note. Neigh = Neighborhood; Dis = Disadvantage; Fam = Family

* $p < .05$

** $p < .01$