

UC Irvine

UC Irvine Previously Published Works

Title

Out-of-School Time and Behaviors During Adolescence.

Permalink

<https://escholarship.org/uc/item/8387n0dt>

Authors

Lee, KTH
Lewis, RW
Kataoka, S
et al.

Publication Date

2018-03-23

DOI

10.1111/jora.12389

Peer reviewed

Out-of-School Time and Behaviors During Adolescence

Kenneth T. H. Lee, Ryan W. Lewis, and
Sabrina Kataoka
University of California, Irvine

Katerina Schenke
University of California, Los Angeles

Deborah L. Vandell
University of California, Irvine

Although adolescents experience an array of out-of-school time (OST) settings, research has primarily focused on these settings in isolation. This study examined time in four OST settings (unsupervised time with peers, paid employment, sports, and nonsports organized activities) in relation to adolescent functioning at age 15 and the end of high school. Individual fixed effects analyses provided a more rigorous control of selection into OST activities by controlling for time-invariant observable and unobservable characteristics. More unsupervised time with peers predicted increases in risky and externalizing behaviors, whereas increases in paid employment predicted gains in work orientation and self-identity. Time in organized sports was associated with increased positive self-identity, highlighting the value of expanding consideration of multiple OST contexts and selection effects.

Adolescent lives can involve a diverse array of out-of-school time (OST) experiences, including spending unsupervised time with peers, working at part-time jobs, and participating in various organized, extracurricular activities. Experiences in these different OST contexts are believed to influence adolescent development by increasing opportunities for youth in some areas while decreasing opportunities in other areas, a perspective that has been referred to as *opportunity processes* (Haynie & Osgood, 2005; Vandell, Larson, Mahoney, & Watts, 2015).

Osgood, Wilson, O'Malley, Bachman, and Johnston (1996), for example, have theorized that unsupervised time with peers presents adolescents with increased opportunities to engage in deviant behavior that are encouraged and rewarded by

peers and less opportunity for social control and norm-setting experiences with adults. From this opportunity perspective, time spent in unstructured, unsupervised time with peers increases the likelihood for youth to participate in risk-taking and delinquent activities. In contrast, organized activities have been theorized to provide opportunities for adolescents to spend time with adult mentors and peers while engaging in intrinsically motivating activities that allow adolescents to build skills in various endeavors while limiting opportunities for misbehavior with peers (Eccles & Gootman, 2002; Larson, 2000). Paid employment has been theorized to afford a mix of opportunities (Staff, Mont'Alvao, & Mortimer, 2015). On one hand, adolescents are responsible for meeting work goals and their efforts are overseen by adult mentors and bosses (Coleman, 1974), but adolescents also are exposed to older teenagers and young adults for whom alcohol use and sexual activity are legal activities (Bozick, 2006; Cauffman & Steinberg, 1995). This exposure may encourage underage adolescents to prematurely engage in risky behaviors.

Prior research examining the effects of these different types of OST context on adolescent developmental outcomes has been limited in two respects. First, because these different types of OST contexts have typically been studied separately, disentangling potentially confounded effects has not been

The end-of-high-school data were collected with support from the Charles Stewart Mott Foundation. The age 15 data were collected with support from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. Support from the Eunice Kennedy Shriver National Institute of Child Health & Human Development of the National Institutes of Health also was provided under Award Number P01HD065704 (PI Greg Duncan). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health. We are most grateful to the Early Child Care Research Network who designed and implemented the Study of Early Child Care and Youth Development through age 15 and for their assistance in contacting study families at the end of high school.

Requests for reprints should be sent to Kenneth T. H. Lee, School of Education, University of California, Irvine, Irvine, CA 92697. E-mail: ktle2@uci.edu

possible. It is unclear, for example, if positive effects associated with organized activities are artifacts of less unsupervised time with peers or if both settings are uniquely associated with adolescent developmental outcomes because of the particular opportunities or risks they confer. A second limitation of prior research is that selection into different activities has not been adequately addressed. It is unclear, for example, in much of the prior research if associations between OST experiences and adolescent developmental outcomes reflect youth differentially selecting into different out-of-school contexts *or* if the associations reflect the impacts of OST contexts on adolescent functioning. This study seeks to address both of these issues.

Unsupervised Time with Peers

Empirical evidence that focuses on unsupervised time with peers has linked this context to higher levels of problem behaviors, including externalizing behaviors and risky behaviors such as early sexual activity. In one study, Osgood and Anderson (2004) examined a sample of 4,000 eighth-grade adolescents and found socializing with unsupervised peers was positively associated with behaviors such as skipping school and selling drugs. Other researchers found adolescent unsupervised time after school to be associated with higher levels of tobacco, alcohol, and marijuana use and to early sexual activity (Richardson, Radziszewska, Dent, & Flay, 1993). In one noteworthy study involving the National Longitudinal Survey of Youth, Aizer (2004) tested the effects of unsupervised time on 8–14-year-olds using sibling fixed effects models. She found that children with adult supervision were less likely to skip school, use alcohol or marijuana, steal something or hurt someone compared to their sibling who lacked adult supervision, suggesting that, at least for younger children, unsupervised time leads to greater problem behaviors. In this study, a longitudinal fixed effects approach is used to study effects of unsupervised time in adolescence.

Paid Employment

Research examining the effects of paid employment on adolescence has reported mixed findings (Staff et al., 2015). Some (Greenberger & Steinberg, 1986) have found paid employment to be detrimental to adolescent development because it prematurely exposes adolescents to situations that put them at risk. In contrast, others have found positive

associations between paid employment and adolescent functioning in areas such as positive work orientation and interests in careers (Coleman, 1974; Zimmer-Gembeck & Mortimer, 2006).

In prior research, there is some indication that adolescents' own preferences and characteristics may partially account for associations between paid employment and adolescent well-being. Researchers found that among nonworking adolescents, those who preferred to work but were not currently employed reported more problem behaviors than their peers who preferred not to work (Staff et al., 2015). This suggests that selection effects may at least partially account for some of the relation between paid employment and adolescent development.

Sports and Other Organized Activities

Organized activities also have been related to adolescent well-being (Vandell, et al., 2015). There is evidence indicating that participation in organized activities is not only protective against problem behaviors but also promotive of positive youth development in areas such as positive self-identity and initiative (Eccles & Gootman, 2002; Larson, 2000). In a meta-analysis, Durlak, Weissberg, and Pachan (2010) found that participation in high-quality after school OST programs was associated with reductions in problem behaviors and increases in self-esteem and self-identity. Other research showed that increased participation in school-based organized activities was negatively associated with problem behaviors such as using drugs and becoming a teen parent (Denault & Poulin, 2009).

Other investigators have differentiated between specific types of organized activities such as sports, arts, and youth clubs, suggesting differential effects by activity. In particular, high school sports participation was found to be associated with relative increases in alcohol use but also higher academic grades (Eccles, Barber, Stone, & Hunt, 2003; Lipscomb, 2007), whereas other organized activities were not linked to alcohol use. Most of these studies did not thoroughly account for potential effects of selection and did not consider other OST settings such as paid employment or unsupervised time.

The Current Study

The purpose of this study is twofold. First, we extend prior research by considering adolescents' experiences in four OST contexts (unsupervised

time with peers, paid employment, sports, and other organized activities) in relation to adolescent behaviors and well-being. All four contexts are considered simultaneously in the analyses in order to disentangle potentially confounded effects of these four contexts. This issue is especially important if out-of-school time represents trade-offs in which more time in one type of activities means less time in another activity.

Second, we seek to address issues of selection effects using a longitudinal design that measured both OST contexts and adolescent development at age 15 and the end of high school. To better account for these selection processes, individual fixed effects (FE) analyses were used in which we relate *changes* in amount of time in each of the four OST contexts between age 15 and end of high school to *changes* in adolescent behaviors during this period. Because individual FE analyses compare an individual with himself or herself at a different point in time, we are able to use the adolescent as his or her own control for time-invariant characteristics such as gender and other unobservable time-invariant self-selection factors (Halaby, 2004; Lipscomb, 2007). In order to compare our findings with prior research, we also conducted pooled ordinary least squares (OLS) analyses in which we tested relations between time in the OST contexts and adolescent functioning, including several child and family covariates in the models. This latter approach is more typically used in OST research.

Drawing on prior research and theory, we focus on four aspects of adolescent development (risk-taking, externalizing behaviors, work orientation, and positive self-identity). According to a positive youth development perspective (Lerner, Almerigi, Theokas, & Lerner, 2005), adolescents' diverse ecologies have the potential to prevent negative developmental outcomes and also promote positive outcomes; however, when ecologies are lacking in resources or are misaligned with adolescents' strengths, they may contrarily increase negative and decrease positive outcomes. We expect that increases in unsupervised time with peers will be linked to higher levels of risk-taking and externalizing behaviors, whereas organized activities are expected to be positively associated with positive self-identities and work orientation. Sports and paid employment are hypothesized to be positively linked to both risky behaviors and to work orientation. We expect to observe these effects of OST contexts in the fixed effects analyses as well as in the more traditional OLS approach.

METHOD

Participants

Participants were drawn from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD), a longitudinal study conducted at 10 research sites (Little Rock, AR; Orange County, CA; Lawrence, KS; Boston, MA; Morganton, NC; Philadelphia, PA; Pittsburgh, PA; Charlottesville, VA; Seattle, WA; Madison, WI). At age 15 (A15) and the end of high school (EOHS), study participants completed surveys about their OST experiences and behaviors. Mothers reported participants' demographic and family characteristics. This paper examines 747 adolescents for whom there were data on OST activities, individual characteristics, and behaviors at both A15 and EOHS. Characteristics of the sample are reported in Table 1.

Measures

OST contexts. *Unsupervised time with peers.* Adolescents reported how many weekdays and how many weekend hours they typically spent at least 30 min in the afternoon or evening after school with other kids (not including brothers or sisters) and without an adult. The scores for weekdays ranged from zero to five weekdays, and the scores for weekend hours ranged from zero to eight weekend hours. A measure of weekly unsupervised time with peers was constructed by standardizing the sum of the standardized value of weekdays and of weekend hours. Weekdays and weekend hours spent unsupervised were standardized and combined to obtain a measure of unsupervised time with peers throughout the week. Higher values indicate more unsupervised time with peers.

Paid employment. Adolescents reported the number of hours per week that they typically worked (1–5 hr, 6–10 hr, 11–15 hr, 16–20 hr, and more than 20 hr) at a paying job during the school year. This report was converted to a continuous scale using the midpoint of each range. If participants indicated they were employed for more than 20 hr, a value of 21 hr was assigned. If participants indicated that they did not work, work hours per week was coded as zero.

Sports. Adolescents reported the number of days during a typical week (ranging from less than 1 day a week to 7 days a week) they participated

TABLE 1
Descriptive Statistics (N = 747)

	Age 15		End of High School		t-Test Between A15 and EOHS t-scores
	Mean or %	SD	Mean or %	SD	
Predictor variables					
Out-of-school context participation					
Unsupervised weekdays with peers (days/week)	1.92	1.87	2.98	1.80	12.92***
Unsupervised weekend hours with peers (hr/week)	3.36	2.75	5.24	2.65	15.37***
Paid employment (hr/week)	1.81	3.90	7.27	8.07	16.60***
Sports activities (days/week)	3.67	2.41	2.47	2.62	-12.50***
Other organized activities (days/week)	3.10	3.08	2.38	2.84	-6.12***
Outcome variables					
Risky behaviors	5.56	5.00	7.63	6.36	10.56***
Externalizing	48.97	9.80	50.65	10.17	4.91***
Work orientation	3.02	0.02	3.18	0.02	7.71***
Self-identity	3.56	0.01	3.53	0.02	1.35
Covariates					
Female	51.27%		51.27%		
Race/ethnicity					
White	80.86%		80.86%		
Black	8.43%		8.43%		
Hispanic	5.62%		5.62%		
Asian/other	5.09%		5.09%		
Maternal age at birth	29.24	5.34	29.24	5.34	
Maternal education at birth	14.69	2.42	14.69	2.42	
Observations		747		747	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

in organized sports, including team sports, training activities, and instructional lessons. If adolescents did not participate in an organized sport, amount of time in sports was coded as zero days.

Other organized activities. Adolescents reported the number of days they participated in other organized activities (arts, nonacademic clubs, and volunteer or community service work) during a typical week (ranging from less than 1 day a week to 7 days). The sum of participation in these activities was taken. If adolescents did not participate in any of these activities, other organized activities was coded as zero days.

Adolescent developmental outcomes. Risky behaviors. Adolescents reported *risky behaviors* using a measure developed by Halpern-Felsher, Cornell, Kropp, and Tschann (2005). Participants were given a list of 53 items and asked if they ever engaged in that particular behavior. Sample items include "skipping school," "selling illegal drugs," and "oral sex." Checked items received a score of one and nonchecked items a score of zero. Responses to the 53 items were summed and standardized at A15 and at EOHS ($\alpha = .89$ at A15 and

$\alpha = .88$ at EOHS). Higher scores indicate a greater affinity to partake in risky behaviors.

Externalizing behaviors. Adolescents self-reported *externalizing behaviors* (30 items; $\alpha = .86$ at A15 and EOHS) using the Youth Self-Report (Achenbach & Rescorla, 2001). Sample items are "fighting" and "bullying others." Each item was rated using a 3-point scale (0 = *not true*, 1 = *sometimes true*, 2 = *very true or often true*) to describe behaviors within the last 6 months, and *t*-scores were calculated.

Work orientation. A subscale of the Psychosocial Maturity Inventory (Greenberger, 2001) measures adolescents' *work orientation*. Sample items include "Hard work is never fun" and "I seldom get behind on my work." Ten items are rated using a 4-point scale (1 = *strongly agree*, 4 = *strongly disagree*). Higher scores indicate more pride in successful completion of tasks ($\alpha = .78$ at A15 and $\alpha = .81$ at EOHS).

Positive self-identity. The Self-Identity subscale of the Psychosocial Maturity Inventory (Greenberger, 2001) measures self-esteem and sense of self, using 10 items. Sample items include "I can't really say what my interests are" and "I act like

something I'm not a lot of the time." Items are scored using 4-point ratings (1 = *strongly agree*, 4 = *strongly disagree*). High scores indicate higher self-esteem and clarity of self-consideration ($\alpha = .77$ at A15 and $\alpha = .84$ at EOHS).

Covariates. Mothers reported the adolescent's gender, race (White, Black, Hispanic, other), maternal age, and maternal education shortly after the study participant's birth.

Analysis Strategy

To test associations between amount of time in the four OST contexts and adolescent functioning, multivariate OLS regressions were conducted using robust standard errors controlling for all covariates. The pooled OLS model used two cross-sections at A15 and EOHS (1,494 observations from 747 adolescents) to estimate the relationship between OST participation and adolescent functioning using the following equation:

$$\begin{aligned} \text{Outcome}_{it} = & \beta_0 + \beta_1(\text{Unsupervised})_{it} \\ & + \beta_2(\text{Employment})_{it} + \beta_3(\text{Sports})_{it} \\ & + \beta_4(\text{Other Organized})_{it} + \delta'X_i + \varepsilon_{it} \\ t = & \text{A15, EOHS} \end{aligned}$$

Outcome_{*i*} reflects the behavior outcomes for adolescent *i* at A15 and EOHS. Unsupervised_{*it*}, Employment_{*it*}, Sports_{*it*}, and Other Organized Activities_{*it*} correspond to the amount an adolescent participated in unsupervised time with peers, paid employment, sports, and other organized contexts, respectively, at both A15 and EOHS. *X_i* captures the vector of demographic, family, and individual covariates and ε_{it} is the error term.

Individual FE models using OLS regressions with time-constant intercept terms for each adolescent were conducted using the following equation:

$$\begin{aligned} \Delta\text{Outcome}_i = & \beta_0 + \beta_1(\Delta\text{Unsupervised})_i \\ & + \beta_2(\Delta\text{Employment})_i + \beta_3(\Delta\text{Sports})_i \\ & + \beta_4(\Delta\text{Other Organized})_i + \Delta\varepsilon_i \end{aligned}$$

The individual FE model compares an individual to himself or herself at a different point in time by taking the difference of each variable between the two panels of data (A15 and EOHS) to control for time-invariant explanatory variables (Halaby, 2004; Wooldridge, 2015). As a result, this model relates *within-individual changes* in amount of time in each of the four OST contexts between age 15 and end of high school to *within-individual changes* in behaviors during this period. In the individual

FE analyses, factors (gender, race/ethnicity, maternal education at birth) in *X_i* are omitted as they do not vary over time.

Out of the 1,494 observations at A15 and EOHS, 88% of observations had no missing data on all predictors and covariates. Of the remaining observations, observations with missing dependent variables were used to impute missing data on the predictor variables and dropped before the analysis following the *multiple impute and delete* approach using 50 imputations (Von Hippel, 2007). Predictive mean matching, logistic regressions, and multinomial logistic regressions were used to impute continuous variables, dummy variables, and categorical variables, respectively.

RESULTS

Preliminary analyses

Table 1 presents descriptive statistics for all variables at A15 and EOHS, as well as results from within-subject *t*-tests contrasting amount of time adolescents spent in the four OST contexts at A15 and EOHS. As shown, there are significant increases from A15 and EOHS in the amounts of time with unsupervised peers on both weekdays and weekends. An increase in the amounts of time in paid employment also was found. Amount of time in organized sports and in other organized activities decreased between A15 and EOHS.

Within-subject *t*-tests were used to contrast adolescents' behaviors. Adolescents reported engaging in more risky behaviors and more externalizing behaviors at EOHS than at A15. Adolescents also reported stronger work orientation at EOHS relative to A15.

Table 2 presents correlations among OST activities and adolescent functioning at A15 and EOHS. There are moderate correlations between A15 and EOHS in amount of time adolescents engaged in unsupervised time with peers ($r = .30$), in sports ($r = .46$), and in other organized activities ($r = .37$). There was less relative stability in the amounts of time spent in paid employment ($r = .14$). Table 2 also reports correlations among the OST activities. At A15, unsupervised time was positively related to amount of time in sports ($r = .13$), whereas amount of time in paid employment was related to amount of nonsports organized activities ($r = .11$). At end of high school, unsupervised time was associated with paid employment ($r = .20$). More time in paid employment was associated with less time in sports ($r = -.15$).

TABLE 2
Correlations Between OST Time and Youth Functioning (N = 747)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Youth functioning Age 15															
(1) Risky behavior	1.00														
(2) Externalizing	.58**	1.00													
(3) Work orientation	-.36**	-.46**	1.00												
(4) Identity	-.18**	-.38**	.45**	1.00											
OST contexts age 15															
(5) Unsupervised time with peers	.34***	.18***	-.12**	.04	1.00										
(6) Paid employment	.08*	.06	.02	-.02	.03	1.00									
(7) Sports	.03	-.05	.12***	.14***	.13***	.05	1.00								
(8) Other organized activities	-.08*	-.03	.10**	.02	-.01	.10*	-.01	1.00							
Youth functioning end of high school															
(9) Risky behavior	.58***	.41***	-.20***	-.07*	.23***	.11**	.05	-.13***	1.00						
(10) Externalizing	.45***	.57***	-.27***	-.19***	.08*	.06	-.01	-.04	.64***	1.00					
(11) Work orientation	-.20***	-.29***	.43***	.26***	.02	.01	.09*	.08*	-.21***	-.39***	1.00				
(12) Identity	-.19***	-.29***	.24***	.39***	.09*	-.04	.06 ^a	.03	-.20***	-.38***	.64***	1.00			
OST contexts															
End of high school															
(13) Unsupervised time with peers	.26***	.15***	-.07 ^a	.07 ^a	.30***	.12**	.09*	-.03	.35***	.23***	.02	.09*	1.00		
(14) Paid employment	.12**	.13***	-.10**	-.01	.06	.14***	-.03	-.03	.15***	.11**	.05	.05	.20***	1.00	
(15) Sports	-.06	-.08*	.07*	.08*	-.04	-.00	.46***	-.09*	-.03	-.05	.08*	.11**	.04	-.15***	1.00
(16) Other organized activities	-.12***	-.05	.11**	.03	-.09*	.03	-.02	.37***	-.13***	-.08*	.08*	.04	-.01	-.07	.00

* $p < .05$; ** $p < .01$; *** $p < .001$.

OST as a Predictor of Behaviors

Table 3 presents results of both the pooled OLS analyses and the individual FE analyses. In the pooled OLS analyses, we see that more unsupervised time with peers is linked to more risky behaviors ($\beta = .32$) and more externalizing behaviors ($\beta = .21$) and to lower work orientation ($\beta = -.06$). Paid employment is positively associated with higher rates of risky behaviors ($\beta = .08$) and higher work orientation ($\beta = .06$). Sports is positively associated with work orientation ($\beta = .09$) and self-identity ($\beta = .12$), while nonsports organized activities are associated with fewer risky behaviors ($\beta = -.07$) and higher work orientation ($\beta = .07$).

Also shown in Table 3 are the results of the individual FE models, which provide a more rigorous test of potential selection effects by controlling for adolescents' time-invariant observable and unobservable characteristics. In these individual FE analyses, increases in an individual's higher amounts of unsupervised time with peers are related to increases in risky behaviors ($\beta = .14$) and externalizing behaviors ($\beta = .13$). Individual increases in paid employment are associated with higher work orientations ($\beta = .11$) and more positive self-identity ($\beta = .07$). Individual increases in sports are related to more positive self-identity ($\beta = .12$).

DISCUSSION

This study advances our understanding of the effects of out-of-school time on adolescents' development by addressing two limitations in the literature. First, we used a prospective longitudinal research design and individual FE analyses to provide a more rigorous control for selection effects into different OST contexts. For comparison purposes, we also used pooled OLS to test associations between time in different OST contexts and adolescent developmental outcomes, a more common approach in this area of research. These analyses, in combination, help to disentangle effects of OST contexts on adolescent developmental outcomes from a priori differences influencing adolescents' selection into different types of OST contexts. Second, effects associated with four common types of OST contexts are considered in the same analytic model. Because prior research typically focused on unsupervised time *or* paid employment *or* sports *or* other organized activities, it has not been possible to determine if reported links between

unsupervised time and risky behaviors could be explained by a dearth of organized activities or by high levels of paid employment that might co-occur with unsupervised time.

Our OLS models find relations that are largely consistent with the prior literature of unsupervised time (Osgood et al., 1996), paid employment (Staff et al., 2015), sports and other organized activities (Eccles et al., 2003) even when we controlled for participation in four different OST contexts. However, when using individual FE analyses to provide a more rigorous control for self-selection into the four OST contexts, some of the significant relations found in the OLS models are no longer significant, suggesting that these relations between these contexts and behaviors are driven by selection.

In regard to unsupervised time with peers, the association with risky behaviors and externalizing behaviors persisted, even after taking into account time-invariant observed and unobserved characteristics in the individual FE analysis, suggestive of a potential causal effect. These results are consistent with Osgood's formulation that unsupervised time with peers sets the stage for the development of problem behaviors. While the results paint a potential causal relationship between unsupervised time with peers and risky and externalizing behaviors, future research should take a further exploration into this developmental context to determine the particular aspects of unsupervised time with peers such as peer effects and lack of adult supervision, among others, that promote these behaviors to provide further suggestions on how to make this context more constructive for late adolescence.

When comparing the results between the OLS and individual FE models for paid employment, relations between paid employment and risky behavior were evident in the OLS analyses but not the individual FE model, suggesting that this relation is largely a function of selection. In other areas, fixed effects analyses suggested that adolescent employment was linked to positive outcomes over time, with employed adolescents reporting stronger work orientations and positive self-identity over time. In these cases, the OST context, not selection, appeared to be accounting for the association. These findings suggest that prior research that relied on OLS regressions may have underestimated positive effects of adolescent employment in areas such as work orientation and self-identity.

The fixed effects analyses also revealed relations between sports activities and adolescents' positive self-identities, whereas relations between sports activities and work orientation were significant in

TABLE 3
Associations Between OST Contexts and Adolescent Functioning

	Risky Behavior		Externalizing		Work Orientation		Self-Identity	
	Pooled OLS	Individual Fixed Effects	Pooled OLS	Individual Fixed Effects	Pooled OLS	Individual Fixed Effects	Pooled OLS	Individual Fixed Effects
Predictor variables (standardized)								
Unsupervised time with peers	.32*** (.03)	.14*** (.03)	.21*** (.03)	.13*** (.03)	-.06* (.03)	-.04 (.04)	.05 (.03)	-.04 (.04)
Paid employment	.08* (.03)	.02 (.03)	.06 (.03)	-.02 (.03)	.06* (.03)	.11*** (.03)	.04 (.03)	.07* (.03)
Sports	-.02 (.03)	-.03 (.04)	-.06 (.03)	-.03 (.03)	.09** (.03)	.05 (.04)	.12*** (.03)	.12** (.04)
Other organized activities	-.07* (.03)	.02 (.03)	-.04 (.03)	-.02 (.03)	.07* (.03)	-.01 (.04)	.01 (.03)	-.01 (.04)
Covariates								
Female	-.36*** (.06)		-.04 (.07)		.10 (.06)		.09 (.06)	
Race/ethnicity								
Black	.18 (.13)		.01 (.13)		-.05 (.11)		.07 (.12)	
Hispanic	.15 (.15)		.25 (.15)		-.21 (.15)		-.24 (.14)	
Asian/other	.26 (.18)		.23 (.16)		-.37* (.17)		-.10 (.16)	
Maternal age at birth	-.00 (.01)		.00 (.01)		-.00 (.01)		.02** (.01)	
Maternal education at birth	-.05*** (.01)		-.02 (.01)		.03* (.01)		-.00 (.01)	
Cohort dummy	.28*** (.04)	.34*** (.04)	.09* (.04)	.17*** (.04)	.32*** (.05)	.24*** (.05)	-.04 (.05)	-.06 (.05)
Constant	1.00*** (.23)	-.17*** (.02)	.25 (.26)	-.08*** (.02)	-.64*** (.25)	-.11*** (.03)	-.37 (.27)	.03 (.03)

Note. Standard errors in parentheses. Covariates for research site fixed effects not shown. Covariates without variation between A15 and EOHS (e.g., gender, race) are omitted from the individual FE models.
* $p < .05$; ** $p < .01$; *** $p < .001$.

the OLS model but not in the individual FE model. These differential findings suggest that associations between sports activities and adolescent outcomes reflect both selection and OST developmental affordances.

When considering the relations between both paid employment and sports on the two positive outcomes (work orientation and self-identity) that were consistent across both the OLS and individual FE models, the results suggest that certain characteristics of the OST environment can have an impact on developing positive identities. Among others, sports and paid employment ask adolescents to operate within a structured and collaborative environment. For example, adolescents in both environments are tasked with fulfilling a role on a particular team where they are tasked with responsibilities that can have detrimental consequences for the people around them. As such, it is possible that participating in this type of structured and collaborative environment can foster the development of positive identities and a deeper examination of structure can be a promising avenue for future research.

Taken together, the current findings underscore notable negative effects of unsupervised time with peers on adolescent well-being during the high school years. This is in contrast to paid employment and organized activities that were positively linked to work orientation and positive self-identity, respectively. The current findings also suggest that many of the links between OST experiences and adolescent functioning reflect selection effects, not causal impacts.

This study has several limitations. First, it lacks detailed information about the opportunity processes within these OST contexts, which could provide insight about the mediating pathways between these contexts and adolescent developmental outcomes. There is likely significant variation in the amount of structure, adult supervision and support, and peer relations in each of these contexts. Measuring the quality of interactions that adolescents have with adults and peers in these four contexts as well as their opportunities to engage in meaningful and challenging tasks is needed to understand *why* paid employment and sports are linked to gains in work orientation and self-identity, whereas unsupervised time is linked to gains in risky behavior and externalizing.

Second, although the individual FE models account for some aspects of selection by modeling time-invariant factors that can influence participa-

tion in different OST contexts, the current analyses do not account for time-varying factors that may influence participation. For example, adolescents whose families may suffer sudden financial hardship may be forced to enter the labor force. Changes in peer groups across high school may result in adolescents to participate in certain organized activities. Future work that uses experimental or quasi-experimental designs is needed to assess the causal impact of programs that reduce unsupervised time with peers, increase time in organized activities, or vary amounts of paid employment to more definitively address the issue of selection.

Finally, although this study is regionally diverse, it is not nationally representative. Replicating these results with a nationally representative sample is needed to assess generalizability and allow for additional analyses that the data used in this study are underpowered to do.

REFERENCES

- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington: University of Vermont, Research Center for Children, Youth, and Families.
- Aizer, A. (2004). Home alone: Supervision after school and child behavior. *Journal of Public Economics*, 88, 1835–1848. [https://doi.org/10.1016/S0047-2727\(03\)00022-7](https://doi.org/10.1016/S0047-2727(03)00022-7)
- Bozick, R. (2006). Precocious behaviors in early adolescence: Employment and the transition to first sexual intercourse. *Journal of Early Adolescence*, 26(1), 60–86. <https://doi.org/10.1177/0272431605282654>
- Cauffman, E., & Steinberg, L. (1995). The cognitive and affective influences on adolescent decision-making. *Temple Law Review*, 68, 1763–1789.
- Coleman, J. S. (1974). Youth: Transition to adulthood. *NASSP Bulletin*, 58(385), 4–11. <https://doi.org/10.1177/019263657405838502>
- Denault, A. S., & Poulin, F. (2009). Intensity and breadth of participation in organized activities during the adolescent years: Multiple associations with youth outcomes. *Journal of Youth and Adolescence*, 38, 1199–1213. <https://doi.org/10.1007/s10964-009-9437-5>
- Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*, 45(3–4), 294–309. <https://doi.org/10.1007/s10464-010-9300-6>
- Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues*, 59, 865–889. <https://doi.org/10.1046/j.0022-4537.2003.00095.x>

- Eccles, J. S., & Gootman, J. A. (2002). *Community programs that promote youth development*. Washington, DC: National Academies Press.
- Greenberger, E. (2001). *Psychosocial Maturity Inventory revised manual*. Irvine: University of California.
- Greenberger, E., & Steinberg, L. (1986). *When teenagers work: The psychological and social costs of adolescent employment*. New York, NY: Basic Books.
- Halaby, C. N. (2004). Panel models in sociological research: Theory into practice. *Annual Review of Sociology*, 30, 507–544. <https://doi.org/10.1146/annurev.soc.30.012703.110629>
- Halpern-Felsher, B. L., Cornell, J., Kropp, R. Y., & Tschann, J. (2005). Oral versus vaginal sex among adolescents: Perceptions, attitudes and behavior. *Pediatrics*, 115, 845–851. <https://doi.org/10.1542/peds.2004-2108>
- Haynie, D. L., & Osgood, D. W. (2005). Reconsidering peers and delinquency: How do peers matter? *Social Forces*, 84, 1109–1130. <https://doi.org/10.1353/sof.2006.0018>
- Larson, R. W. (2000). Toward a psychology of positive development. *American Psychologist*, 55, 170–183. <https://doi.org/10.1037/0003-066X.55.1.170>
- Lerner, R. M., Almerigi, J. B., Theokas, C., & Lerner, J. V. (2005). Positive youth development: A view of the issues. *Journal of Early Adolescence*, 25, 10–16. <https://doi.org/10.1177/0272431604273211>
- Lipscomb, S. (2007). Secondary school extracurricular involvement and academic achievement: A fixed effects approach. *Economics of Education Review*, 26, 463–472. <https://doi.org/10.1016/j.econedurev.2006.02.006>
- Osgood, D. W., & Anderson, A. L. (2004). Unstructured socializing and rates of delinquency. *Criminology*, 42, 519–550. <https://doi.org/10.1111/j1745-9125.2004.tb00528.x>
- Osgood, D. W., Wilson, J. K., O'Malley, P. M., Bachman, J. G., & Johnston, L. D. (1996). Routine activities and individual deviant behavior. *American Sociological Review*, 61, 635–655. <https://doi.org/10.2307/2096397>
- Richardson, J. L., Radziszewska, B., Dent, C. W., & Flay, B. R. (1993). Relationship between after-school care of adolescents and substance use, risk taking, depressed mood, and academic achievement. *Pediatrics*, 92(1), 32–38.
- Staff, J., Mont'Alvao, A., & Mortimer, J. T. (2015). Children at work. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science (Vol. 4, Ecological settings and processes)*. New York, NY: Wiley.
- Vandell, D. L., Larson, R. W., Mahoney, J. L., & Watts, T. W. (2015). Children's organized activities. In R. M. Lerner (Ed.), *Handbook of child psychology and developmental science (Vol. 4, Ecological settings and processes)* New York, NY: Wiley.
- Von Hippel, P. T. (2007). Regression with missing Ys: An improved strategy for analyzing multiply imputed data. *Sociological Methodology*, 37, 83–117. <https://doi.org/10.1111/j.1467-9531.2007.00180>
- Wooldridge, J. M. (2015). *Introductory econometrics: A modern approach*. Scarborough, Canada: Nelson Education.
- Zimmer-Gembeck, M. J., & Mortimer, J. T. (2006). Adolescent work, vocational development, and education. *Review of Educational Research*, 76, 537–566. <https://doi.org/10.3102/00346543076004537>