

Organized Activities During High School and Adjustment One Year Post High School: Identifying Social Mediators

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Abstract This longitudinal study investigated social capital as a way through which youths' organized activities promote their future adjustment. Specifically, we examined social mediators of the associations between intensity, duration, and breadth of participation from age 14 to 17 and adjustment at age 18. Two social mediators were tested: support from the activity leader and social integration into the activity peer group. In addition, we examined how these mediation effects vary across gender. The sample consisted of 228 French Canadian adolescents (65 % girls). Youths were surveyed yearly from age 12 to 18. Controlling for prior adjustment at age 12, greater duration of participation from age 14 to 17 was associated with lower problematic alcohol use and higher civic engagement at age 18 through support from the activity leader. In addition, for boys only, greater duration of participation was associated with fewer subsequent depressive symptoms through social integration into the activity peer group. Overall, our results suggest that sustained participation allows youths to develop positive social experiences within organized activities, which, in turn, promote their future adjustment. Moreover, boys might benefit more from social experiences in organized activities than girls, at least with respect to depressive symptoms.

Keywords Organized activities · Social processes · Mediation analysis · Adolescence · Psychosocial adjustment

Introduction

Youths' participation in organized activities at school or in the community is associated with several indicators of positive adjustment (i.e., academic achievement, fewer externalizing and internalizing problems, and civic engagement) which extend beyond adolescence (see Feldman Farb and Matjasko 2012 for a review). These activities provide unique opportunities for forming and strengthening social ties with peers and nonfamilial adults (Hansen et al. 2003; Mahoney et al. 2005; Schaefer et al. 2011). These social experiences are often mentioned as processes explaining the positive impact of organized activities (Denault and Poulin 2008; Mahoney et al. 2002). However, their mediating role has rarely been empirically examined and few studies have explored how these processes vary according to the adolescents' characteristics (Rose-Krasnor 2008). This study extends prior research by examining: (a) whether social experiences with the adults and peers in organized activities mediate the associations between activity participation during high school (ages 14–17) and adjustment 1 year post high school (age 18); and (b) whether these mediating associations differ by gender.

Youth Organized Activities as a Source of Social Capital for Future Adjustment

Social capital commonly refers to the presence of positive social relationships that provide developmental advantages through interpersonal trust and reciprocity (Coleman 1988;

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Putnam 2000). It has been operationalized using various indicators, including youths' friendship networks, the depth of relationships, and access to support and information that promote youths' positive adjustment (Pettit et al. 2011; Pulkkinen et al. 2011). Organized activities allow adolescents to develop a network of support with adults in addition to the support provided by parents and teachers (Jarrett et al. 2005; Larson et al. 2006; Mahoney et al. 2002). They also give adolescents access to a peer group within which they can develop and maintain friendships (Schaefer et al. 2011). Organized activities are thus likely to constitute an extra source of social capital for participating adolescents (McGuire 2012).

It is during adolescence that the acquisition of social capital is more likely to have long-lasting impacts (Helve and Bynner 2007). Adolescence is an important developmental period during which youths develop the attitudes, skills, and knowledge needed to become fully independent adults. Adolescents seek autonomy from their parents and increase their involvement in peer groups, experimentation, and risk taking (Brown and Larson 2009; Steinberg 2007). Consequently, this age period is a crucial time for youths to bond with peers and supportive adults who can help them negotiate a successful transition to adulthood (Eccles and Gootman 2002). For instance, greater depth of relationships (e.g., support and closeness) during adolescence is associated with better adjustment in young adulthood in terms of educational attainment, psychological well-being and fewer externalizing problems (Pettit et al. 2011; Pulkkinen et al. 2011). Therefore, youths may use the social capital acquired through activity participation to develop into successful adults.

Relevant Social Experiences Within Organized Activities

Few studies have examined opportunities for social capital development within organized activities and how they relate to youths' well-being (McGuire 2012). First, youths who participate in organized activities report a higher level of nonfamilial adult support than those who do not (Metzger et al. 2009). In the context of organized activities, adult leaders can become mentors, confidants and a source of information and emotional support (Mahoney et al. 2002, 2004). Such adult investment, at a critical age when youths are making important decisions about their future, could help explain the long-term benefits of organized activities (Mahoney et al. 2004). Quantitative studies have shown that support from these adults is beneficial for participating youths, especially with regard to depressive symptoms and risky behaviors (Denault and Poulin 2008; Mahoney et al. 2002). One qualitative study also suggests that participating youths may benefit from their ties to

supportive adults in ways that facilitate further education (Jarrett et al. 2005). Second, organized activities are structured and supervised by adult leaders, providing a safe context that can enable positive social integration experiences. Being part of a peer group, being liked by the members of this group, and making new friends could also be important social experiences within organized activities (Denault and Poulin 2008; Schaefer et al. 2011). Research suggests that the benefits of participation with regard to risky behaviors and educational and psychological outcomes are partly a function of associating with the activity peer group (Eccles and Barber 1999; Fredricks and Eccles 2005). Support from the activity leader and social integration into the peer group may thus be relevant mediators of participation outcomes.

Dimensions of Activity Participation and Youth Adjustment

Three dimensions of participation are usually considered by researchers, namely intensity of participation (e.g., number of hours per week), duration of participation, that is, the length of time over which the participation extends (e.g., number of years), and breadth of participation, which refers to the number of different types of activities youths are involved in (e.g., sports, prosocial activities) (Bohnert et al. 2010). Studies suggest that these three dimensions of participation are differentially linked to adjustment outcomes and that the relations are usually linear (Bohnert et al. 2010). However, the measurement of these dimensions varies greatly, which leads to inconsistent and sometimes contradictory findings (Feldman Farb and Matjasko 2012). With respect to psychological adjustment, Busseri et al. (2006) found participation intensity (i.e., how often in the last month) and breadth (i.e., 0–7 activities) to be positively related to a composite score of well-being including depressive symptoms. By contrast, Denault and Poulin (2009) found participation intensity (i.e., number of hours per school year) and breadth (i.e., 0–7 activity types) to be unrelated to a composite score of internalizing problems including depressive symptoms. Moreover, Randall and Bohnert (2009) found that duration of participation was unrelated to depressive symptoms. As for risky behavior, Busseri et al. (2006) found both intensity of participation (i.e., how often in the last month) and breadth of participation (i.e., 0 to 7 activities) to be negatively related to a composite score of risky behavior including substance use, sexual activity, delinquency and aggressive behaviors. By contrast, Denault and Poulin (2009) found participation intensity (i.e., number of hours per school year) and breadth (i.e., 0–7 activity types) to be unrelated to a composite score of risky behavior including substance use, unsafe sex and antisocial behaviors. In addition,

Darling (2005) found that duration of participation was unrelated to alcohol use. With respect to academic outcomes, most studies have shown that both intensity and duration of participation are positively related to academic achievement (Darling 2005; Denault and Poulin 2009) and later educational attainment (Gardner et al. 2008). Breadth of participation has also been shown to be positively related to academic achievement (Denault and Poulin 2009; Rose-Krasnor et al. 2006). Lastly, with regard to civic engagement, studies have shown that intensity, duration and breadth of participation during adolescence are positively related to subsequent volunteering and voting (Denault and Poulin 2009; Fredricks and Eccles 2006; Gardner et al. 2008; Zaff et al. 2003). Together, these findings suggest a general trend of positive links between dimensions of participation and outcomes.

Dimensions of participation are also likely to impact youths' social experiences within organized activities in different ways. With regard to intensity of participation, dedicating a greater amount of time to activities could allow for a greater number of social experiences, including increased access to the adults and peers involved in the activities (Denault and Poulin 2009). From a social capital perspective, more intense participation might also increase youths' exposure to the resources provided by their social ties within activities. As for duration of participation, sustained participation could foster significant relationships that take time to develop, such as supportive friendships and youth-adult relationships (Jarrett et al. 2005; Mahoney et al. 2005). Lastly, a wide breadth of participation could foster a plurality of relationships with different adults and peers. While participation that is scattered across too many different activities could hinder the development of meaningful relationships, studies usually highlight the importance of varied forms of social capital (Kahne and Bailey 1999). In sum, intensity, duration and breadth of participation might differentially impact the quantity or quality of the social experiences within activities. Therefore, it is important to consider these three dimensions when examining the mediating effect of social experiences within organized activities.

Potential Moderated Mediation Effect of Gender

Statisticians refer to a moderated mediation effect when the strength of an indirect effect depends linearly upon the value of a moderator (Preacher et al. 2007). When examining the social processes of participation, the moderated mediation effect of gender should be considered. First, boys appear to benefit more from activity participation than girls. Mahoney et al. (2003) found that participation in extracurricular activities was more strongly associated with educational aspirations among boys than girls. Fredricks

and Eccles (2006) also found that breadth of participation was associated with a greater decrease in alcohol use up to 1 year after high school among boys compared to girls and that participation in sports was related to lower depression only among boys. Second, boys appear to be especially sensitive to social experiences within organized activities. Denault and Poulin (2008) found that, for boys only, greater social integration into the activity peer group was associated with lower grades and more problem behaviors whereas support from the activity leader was linked to fewer problem behaviors. Therefore, the associations between activity participation, social experiences within organized activities, and youth outcomes might differ for boys and girls.

Study Objectives and Hypotheses

The aim of this study was to identify social experiences that are likely to mediate the associations between participation in organized activities and youth outcomes. More specifically, the first objective was to examine whether support from the activity leader and social integration into the activity peer group mediate the associations between activity participation during high school (intensity, duration, and breadth of participation; ages 14–17) and four indicators of adjustment 1 year post high school (age 18). In order to provide an accurate comparison with prior research, this study examined frequently used indicators of youth adjustment including psychological, behavioral, educational and social functioning (Feldman Farb and Matjasko 2012). Youth adjustment commonly refers to adaptive or maladaptive psychosocial responses to significant life changes during adolescence (Bradley 1997). Accordingly, the operational definition of adjustment used in this study includes depressive symptoms, problematic alcohol use such as excessive drinking, school attainment as measured by educational status, and civic engagement including voluntarism and political participation. Since no study to our knowledge has examined these mediating effects, it was difficult to formulate hypotheses. However, in accordance with social capital theory, we expected mediation to be demonstrated in ways that would promote later adjustment. In other words, we expected that greater intensity, breadth, and duration of participation would lead to greater support from the activity leader and better social integration into the activity peer group, which, in turn, would promote lasting benefits of participation.

The second objective of this study was to investigate whether these associations varied by gender. Based on previous research (Denault and Poulin 2009; Mahoney et al. 2003), we expected to find a moderated mediation effect of gender with possible stronger associations among

boys, particularly with regard to depressive symptoms. In order to control for selection effects and pre-existing differences between participating youths (Fredricks and Eccles 2006), prior indicators of adjustment, gender (when not tested as the moderator) and family structure (Eccles and Barber 1999; Harrison and Narayan 2003) were used as control variables. These control variables were measured prior to the transition to high school and activity participation so as to not overestimate participation outcomes (Fredricks and Eccles 2006).

Methodology

Participants and Research Design

The data used in this study came from a longitudinal study that began in 2001 with 390 students (58 % girls) in Grade 6 ($M_{\text{age}} = 12.38$, $SD = 0.42$). These youths ($N = 390$) were mostly Caucasian (90 %) and French-speaking and were recruited from eight schools in the Laval School Board in Quebec (Canada). They mostly came from intact families (68 %) and their families' annual income before taxes was, on average, over CAN\$50,000. This study covered three phases: (a) the last year of elementary school (Grade 6; age 12), (b) high school (Grades 8, 9, 10 and 11 in Quebec; ages 14–17) and (c) 1 year post high school (age 18). The participation rate of the initial sample varied from 72 to 78 % from age 14 to 17 and was 79 % at age 18. The sample used in this study was selected in three steps. First, because dimensions of participation such as the duration might depend on the number of study waves in which the youths took part, only those who took part in at least three of the four annual data collections during high school were selected ($n = 285$). Second, among these youths, only those who participated in at least one organized activity during high school were selected ($n = 251$) (see the selection criteria below). Third, among these youths, only those for whom outcome data were collected at age 18 were selected for the final sample ($n = 228$). Compared to the rest of the initial sample, a greater number of youths from the final sample came from intact families (76 vs. 56 %, $p < .001$) and a greater proportion of them were girls (65 vs. 50 %, $p < .05$). This subsample did not differ from the rest of the initial sample with respect to prior levels of adjustment at age 12.

Procedure

At age 12, the control variables were measured using a self-report questionnaire completed individually in the classroom under the supervision of trained research assistants. From age 14 to 17 (Grades 8–11), participation in

organized activities during the school year (i.e., from September to June) was measured retrospectively each year, in two steps. First, during a structured telephone interview conducted by trained research assistants, youths were asked to identify the organized activities in which they had participated during the school year through a free recall procedure. Only the activities that met the following criteria were retained: (a) regular frequency of participation (i.e., at least once a month); (b) presence of (an) adult leader(s); (c) rule-guided engagement; and (d) presence of peers. For each activity, youths were asked to answer a series of questions including the number of hours of participation per week and the number of weeks of participation. Second, participating youths individually completed a questionnaire in the classroom measuring their social experiences within the context of organized activities. As this questionnaire was time consuming, it was completed for only one targeted activity each year. Because several youths were involved in more than one activity per year ($min = 1$ to $max = 6$), the following criteria were applied to select the target activity (Denault and Poulin 2008): (a) the activity in which the youth participated the greatest number of hours per week; and (b) if more than one activity met this criterion, the youth selected his/her preferred activity. This procedure was repeated in Grades 8, 9, 10, and 11. Consequently, a maximum of four target activities were identified for each youth across the high school years and measures of the dimensions of participation (i.e., intensity, duration, and breadth) were based on these four activities. At age 18, the indicators of adjustment were measured through a self-report questionnaire. Most of the questionnaires were administered at the youth's home while some questionnaires were mailed out (approximately 5 %). Participants received \$20 each year.

Measures

Dimensions of Participation in the Target Activities From Age 14 to 17

Breadth of Participation First, the target activities identified from Grade 8 to 11 were classified into four types: (1) team sports, (2) individual sports, (3) cultural activities and (4) prosocial activities. Since *team sports* (e.g., hockey) and *individual sports* (e.g., gymnastics) provide distinct experiences (Denault and Poulin 2007), they were separated. *Cultural* activities (e.g., drama, faith-based activities, and science clubs) relate to three major domains of culture, namely art, religion and science. *Prosocial* activities (e.g., Scouts) foster social exchanges from a community perspective involving social engagement. These four activity types were derived from those currently used in the (mainly North American) literature: sports, artistic activities,

academic clubs and prosocial activities, the latter of which may or may not include faith-based activities (Eccles and Barber 1999; Fredricks and Eccles 2006; Larson et al. 2006). Because academic clubs and faith-based activities were uncommon in our sample, we grouped together the cultural domains of art, religion and science in accordance with the classification of extracurricular activities used by the *Association des institutions d'enseignement secondaire* (1995) in Quebec, Canada. This measure thus reflects the cultural interests and participation opportunities of the studied sample. For each year, activity types were coded into dummy variables. Second, the number of different activity types from Grade 8 to 11 was calculated. Breadth of participation thus represents the number of different types of target activities that the youths participated in from Grade 8 to 11, and could vary between 1 and 4.

Intensity of Participation To calculate participation intensity, the number of hours of participation per week was first multiplied by the number of weeks of participation for each target activity (Denault and Poulin 2009). Second, a total intensity score was obtained by adding up the participation intensity scores obtained in Grades 8, 9, 10 and 11 for the target activity. Third, given that some youths did not report a target activity each year during the high school period, this score was divided by the number of years for which they reported a target activity from Grade 8 to 11. The intensity score thus reflects the average intensity of the youths' participation in target activities from Grade 8 to 11.

Duration of Participation The number of years during which youths reported one target activity, all types combined, was calculated. Since participation was assessed over a 4-year period (Grades 8–11), the value of this variable ranged from 1 to 4. Limiting the subsample to youths who participated in at least three of the four data collections from Grade 8 to 11 minimized the impact of missing values for this measure.

Social Experiences Within the Target Activities From Age 14 to 17

Support From the Activity Leader A 4-item scale drawn from the work of Mahoney et al. (2002) measured the youths' perception of support from the leader of the target activity ("I know my activity leader well"; "If I had a problem, I would not hesitate to go talk with my activity leader"; "I trust my activity leader"; "The activity leader cares about me and considers me to be important"). If there were more than one adult leader, youths were asked to answer these questions about the one they felt closest to. Items were rated on a 5-point Likert scale ranging from 1

(*not at all true*) to 5 (*very true*). A mean score was calculated for each target activity from Grade 8 to 11 ($\alpha = .87$ to $\alpha = .91$). The mean of these scores was used in the analyses ($r = .40$ to $r = .56$, from one grade to another). This variable thus represents the average perceived support from the leaders of the target activities from Grade 8 to 11.

Social Integration Into the Activity Peer Group A 5-item scale was used to measure the youths' perception of their social integration into the target activity peer group ("I am quite alone and don't talk to anyone" [reversed]; "Sometimes I get together with kids from the activity outside the activity"; "I feel appreciated by the other kids"; "I would like to continue hanging out with some of these kids when the activity is over"; "Participating in this activity helped me make new friends"; Denault and Poulin 2008). Items were rated on a 5-point Likert scale ranging from 1 (*not at all true*) to 5 (*very true*). A mean score was calculated for each target activity from Grade 8 to 11 ($\alpha = .57$ to $\alpha = .63$). The mean of these scores was used in the analyses ($r = .35$ to $r = .47$, from one grade to another). This variable thus represents the average perceived social integration into the target activity peer group from Grade 8 to 11.

Indicators of Adjustment at Age 18

Depressive Symptoms Participants completed the French version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977) validated by Fuhrer and Rouillon (1989). The CES-D has been shown to be reliable and valid across a wide variety of demographic characteristics in the general population samples tested (Radloff 1977). For the 20 items (e.g., "I felt sad"; "I was bothered by things that usually don't bother me"; "I felt hopeful about the future"; "My sleep was restless"; $\alpha = .72$), participants indicated how often they had experienced the symptom during the previous week [0 = *rarely or never* (0–1 day); 1 = *a few times or not very often* (1–2 days); 2 = *occasionally or somewhat often* (3–4 days); 3 = *most of the time or all the time* (5–7 days)]. The item scores were summed, with high scores indicating more severe symptomatology. This variable was then transformed using the natural logarithm to approximate a normal distribution.

Problematic Alcohol Use Four indicators of alcohol use over the previous 3 months were used to create a composite score of problematic alcohol use (Dishion and Owen 2002): (1) frequency of consumption of beer, wine and hard liquor separately (3 items; 1 = *never* to 8 = *2–3 times a day or more*), (2) number of drinks generally consumed on each occasion separately for beer, wine and hard liquor (3 items; 1 = *less than one drink* to 6 = *six*

drinks or more), (3) number of times five drinks were consumed at a time (1 = *never* to 4 = *more than five times*) and (4) alcohol intoxication (7 items), for example, “Have you ever had problems [...] at work because of alcohol?” (1 = *never* to 5 = *more than 5 times*). A mean score was calculated for these four standardized indicators ($\alpha = .80$; $r = .45$ to $r = .56$).

Educational Status The highest educational level attained was used as an indicator of educational status. It was operationalized based on three levels: (1) having dropped out of high school, (2) attending high school or having attained a high school diploma and not pursuing further education or (3) attending junior college.

Civic Engagement Two scales were used to create a composite score of civic engagement. First, 15 items ($\alpha = .90$; Flanagan et al. 1999) measured the importance attached to (a) civic duty, (b) society or environment and (c) altruism (e.g., “Doing something to improve my community”; 1 = *not at all important* to 5 = *very important*). These three scores were standardized. Second, an 8-item scale ($\alpha = .84$; Smetana and Metzger 2005) was used to measure the average frequency of civic actions over the previous 9 months (e.g., “Soliciting signatures for a petition”; 1 = *never* to 5 = *always or almost always*). This score was standardized. A mean score was then calculated for the four standardized indicators ($\alpha = .80$; $r = .33$ to $r = .59$).

Control Variables at Age 12

Family Structure Family structure was used as a socioeconomic indicator: 1 = intact family and 0 = other family structure. A family was considered intact when both biological parents were present in the home.

Depressive Symptoms Participants completed the French version of the Children’s Depression Inventory (CDI; Kovacs 1981) validated among Quebec children (Saint-Laurent 1990). The CDI has been shown to be reliable and valid in large representative samples of youths (Kovacs 1983). This inventory measures the intensity of depressive symptoms during the previous 2 weeks. The item relating to suicidal ideation was withdrawn. The remaining 26 items were added up ($\alpha = .85$), with a high score indicating more severe symptomatology. The scores were transformed using the square root function to approximate a normal distribution.

Alcohol Use Participants indicated the number of alcoholic beverages consumed during the previous month. This

variable was then dichotomized: 1 = those having used alcohol and 0 = those reporting no alcohol use.

Academic Achievement The mean of the participants’ grades in Mathematics and French as recorded in the school report card was used as an indicator of academic achievement ($r = .65$).

Prosociality Youths’ prosocial behavior was rated by their teacher using four items from the Prosocial Behavior Questionnaire (e.g., “Helps others”; 1 = *never true* to 5 = *almost always true*; Weir et al. 1980). This questionnaire has been validated among children and showed satisfactory reliability. A mean score of the four items used was calculated ($\alpha = .85$). Prosocial behavior was used as a proxy for civic engagement because it is seen as a way for early adolescents to engage in civic behaviors (Sherrod et al. 2002).

Statistical Analyses

Two sets of analyses were conducted separately. First, Preacher and Hayes’ (2008) multiple mediator models were used to examine the mediator effects of support from the activity leader and social integration into the activity peer group on the relationship between the dimensions of participation from age 14 to 17 and adjustment at age 18. This procedure includes the mediators simultaneously and assumes that they do not act independently. Analyses were performed separately for each dimension of participation and for each adjustment indicator (see Fig. 1). This model tested for the total effect (c) and direct effect (c') of the dimension of participation on adjustment as well as for the indirect effects of the mediators ($a_i b_i$, $i = 1$ to j mediators). Each specific indirect effect, defined as the indirect effect of a particular mediator (i.e., $a_1 b_1$ or $a_2 b_2$), was calculated as the product of the two regression coefficients between the dimension of participation and adjustment through the mediator. The total indirect effect was defined as the sum of the indirect effects across both mediators $\sum_i (a_i b_i)$. To test for mediation, the *bootstrapping* procedure ($n = 5,000$) was used to generate a parameter estimate and a percentile bootstrap confidence interval (CI) for the total and specific indirect effects. If the 95 % bias-corrected CI did not contain zero, then the indirect effect was statistically significant and mediation was demonstrated (Preacher and Hayes 2008). In addition, if the direct effect (c') was not statistically significant when at least one of the indirect effects (i.e., $a_1 b_1$ or $a_2 b_2$) was statistically significant, complete mediation was demonstrated. For the sake of parsimony, only the mediator models for which the main variables were correlated at $p < .25$ were tested (i.e., links

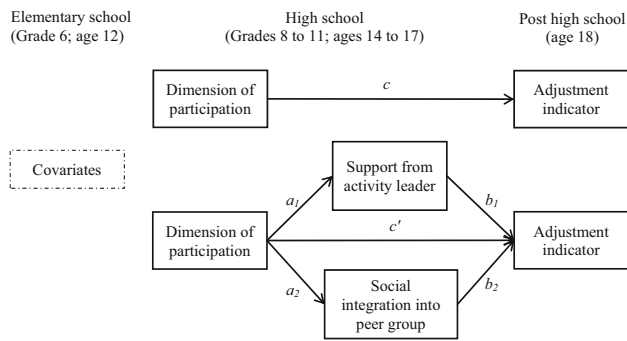


Fig. 1 Mediation of the association between the dimensions of participation during high school and adjustment 1 year post high school by social mediators within organized activities

a, b and c; Bendel and Afifi 1977). In each model, gender, family structure and prior adjustment (age 12) were introduced as control variables in the first step of the analysis.

Second, Preacher et al.'s (2007) moderated mediation models were used to examine the moderation effect of gender on the simple mediation of the relationship between dimensions of participation from age 14 to 17 and adjustment at age 18 through support from the activity leader or social integration into the activity peer group. This examination could only be carried out for one mediator at a time. Analyses were performed separately for each dimension of participation, each social mediator, and each adjustment indicator. We simultaneously tested for the moderation effect of gender on the relationship between the dimension of participation and the mediator (a) and the relationship between the mediator and the indicator of adjustment (b). Moderated mediation was demonstrated when one of these relationships (i.e., a or b) varied systematically as a function of gender. Preacher et al.'s (2007) moderated mediation model calculates the Sobel test and bootstrap ($n = 5,000$) CI for the moderated mediation effect. For the sake of parsimony, only the mediation models for which the main variables were correlated at $p < .25$ for boys or girls were tested. The control variables included in the preceding analyses were included again here, with the exception of gender since it was tested as the moderator.

Results

Descriptive Statistics

Descriptive statistics for the study variables are provided in Table 1. From age 14 to 17, average participation rates were 32 % for individual sports, 39 % for team sports, 46 % for cultural activities and 18 % for prosocial activities. Most youths (65.8 %) reported only one activity type

($n = 150$), although 30.7 % participated in two activity types ($n = 70$) and 3.5 % participated in three activity types ($n = 8$). As regards educational status at age 18, 18.5 % of the final sample had dropped out of high school ($n = 42$), 24.2 % were in high school ($n = 55$), and 57.3 % were in junior college ($n = 130$). High school dropout only affected duration of participation: $F(2, 224) = 6.37, p = .002$. Based on Bonferroni's post hoc tests, youths who dropped out of high school reported a shorter duration of participation from age 14 to 17 than those who were attending junior college ($p = .007$). However, because youths who had dropped out of high school did not differ from high schoolers with regard to the dimensions of participation, they were included in further analyses.

Mediation Effects of the Dimensions of Participation

A correlation matrix of the main study variables is provided in Table 1. The correlation between intensity and breadth of participation was significant, negative, and low ($-.13$) whereas the other correlations between the dimensions of participation were significant, positive, and moderate (.19 and .23), which supports our decision to examine them separately. The correlation between support from the activity leader and social integration into the activity peer group was significant, positive, and moderate-to-large (.46). The correlations displayed in Table 1 also allowed us to identify which mediation models would be tested in further analyses (i.e., correlations among the study variables at least at the $p < .25$ level for links a, b, and c; Bendel and Afifi 1977). Based on the bivariate correlations, five out of 12 possible multiple mediation models were tested, namely: (a) participation intensity and educational status; (b) duration of participation and depressive symptoms; (c) duration of participation and problematic alcohol use; (d) duration of participation and educational status; and (e) duration of participation and civic engagement.

Only three of these multiple mediation models were statistically significant (see Table 2). First, the total indirect effect and specific indirect effect of social integration into the activity peer group significantly mediated the relationship between duration of participation and depressive symptoms, as demonstrated by the absence of zero in the confidence intervals. Duration of participation was positively related to social integration into the activity peer group ($B = 0.21$), which, in turn, was negatively related to depressive symptoms ($B = -0.10$). The total effect (c) was statistically significant ($B = -0.05, t(220) = -2.13, p = .035$). Since the direct effect (c') was not statistically significant ($B = -0.02, t(220) = -0.80, p = .425$), the mediation was complete. Because the total indirect effect only added 0.0003 to the size of the CI, we cannot conclude

Table 1 Bivariate correlations among study variables and descriptive statistics

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Control variables (age 12)															
1. Gender (65 % girls)	-	-.06	-.12	.06	-.07	-.14*	.15*	.05	.05	.13	-.02	-.16*	.07	-.02	-.21***
2. Family structure (76 % intact)	-	-	-.02	-.03	.09	.16*	-.04	.16*	-.01	.09	.08	.00	-.07	.22***	.02
3. Depressive symptoms ^a	-	-	-	.18**	-.32***	-.15*	.08	.02	-.01	-.10	-.11	.26***	.12	-.26***	-.03
4. Alcohol use (22 % yes)	-	-	-	-	-.21***	-.13	-.02	.03	.11	-.01	-.02	.12	.21***	-.34***	-.07
5. Academic achievement	-	-	-	-	-	.27***	-.06	.09	.02	-.05	-.09	-.04	-.07	.37***	.16*
6. Prosociality	-	-	-	-	-	-	-.09	.02	.07	.15*	.15*	-.11	-.01	.14*	.09
Activity participation (ages 14–17)															
7. Intensity	-	-	-	-	-	-	-	.19**	-.13*	.25***	.25***	-.04	.03	.08†	-.05
8. Duration	-	-	-	-	-	-	-	-	.23***	.30***	.31***	-.14*	-.12†	.23***	.17*
9. Breadth	-	-	-	-	-	-	-	-	-	-.12†	-.02	-.07	.04	-.01	.06
10. Support from activity leader	-	-	-	-	-	-	-	-	-	-	.46***	-.21**	-.13†	.08†	.19**
11. Social integ. into peer group	-	-	-	-	-	-	-	-	-	-	-	-.26***	-.01	.09†	.11†
Adjustment indicators (age 18)															
12. Depressive symptoms ^a	-	-	-	-	-	-	-	-	-	-	-	-	.23***	-.08†	.01
13. Problematic alcohol use ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-.31***	-.15*
14. Educational status	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15*
15. Civic engagement ^b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>M</i>	-	-	3.24	-	3.32	3.16	100.83	2.79	1.38	3.58	3.70	0.94	0.02	1.39	0.05
<i>SD</i>	-	-	1.02	-	0.55	0.89	83.18	1.11	0.55	0.99	0.72	0.40	0.77	0.78	0.78

Gender (0 = girls, 1 = boys); family structure (1 = intact family, 0 = other family structure)

† $p < .25$; * $p < .05$; ** $p < .01$; *** $p < .001$

^a Transformed variables

^b Standardized variables

Table 2 Significant indirect effects of dimensions of participation during high school on adjustment 1 year post high school through social mediators

Social mediators	Parameter estimate	SE	95 % BC CI	
			Lower	Upper
Duration of participation and depressive symptoms ($n = 227$)				
Total	-.03*	.01	-.0541	-.0123
Support from activity leader	-.01	.01	-.0273	.0064
Social integration into peer group	-.02*	.01	-.0467	-.0052
Duration of participation and problematic alcohol use ($n = 228$)				
Total	-.01	.02	-.0478	.0317
Support from activity leader	-.03*	.02	-.0679	-.0011
Social integration into peer group	.02	.02	-.0114	.0641
Duration of participation and civic engagement ($n = 223$)				
Total	.03	.02	-.0081	.0799
Support from activity leader	.04*	.02	.0072	.0857
Social integration into peer group	-.01	.02	-.0443	.0321

BC CI bias-corrected confidence intervals

Significant indirect effect when * $p < .05$

that support from the activity leader improved the mediation.

Second, the specific indirect effect of support from the activity leader significantly mediated the relationship between duration of participation and problematic alcohol use, as demonstrated by the absence of zero in the confidence interval. Duration of participation was positively related to support from the activity leader ($B = 0.28$), which, in turn, was negatively related to problematic alcohol use ($B = -0.11$). The total effect (c) was not statistically significant ($B = -0.09$, $t(221) = -1.94$, $p = .054$), but this does not preclude the presence of mediation (see Preacher and Hayes 2008, p. 880 for further discussion). Since the direct effect (c') was not statistically significant ($B = -0.08$, $t(221) = -1.65$, $p = .101$), the mediation was complete.

Third, the specific indirect effect of support from the activity leader significantly mediated the relationship between duration of participation and civic engagement as demonstrated by the absence of zero in the confidence interval. Duration of participation was positively related to support from the activity leader ($B = 0.27$), which, in turn, was positively related to civic engagement ($B = 0.13$). The total effect (c) was statistically significant ($B = 0.14$, $t(216) = 3.04$, $p = .003$). Since the direct effect (c') was statistically significant ($B = 0.11$, $t(216) = 2.22$, $p = .028$), the mediation was partial.

Moderated Mediation Effect of Gender

First, independent sample t tests were used to examine gender differences among the main study variables. Boys ($M = 118.22$; $SD = 101.35$) reported significantly greater intensity of participation than girls ($M = 91.43$; $SD = 70.08$), $t(226) = -2.34$, $p = .020$. Girls ($M = 0.99$; $SD = 0.37$) reported significantly more depressive symptoms than boys ($M = 0.85$; $SD = 0.44$), $t(226) = 2.50$, $p = .013$. Girls ($M = 0.17$; $SD = 0.74$) also reported significantly more civic engagement than boys ($M = -0.18$; $SD = 0.81$), $t(225) = 3.22$, $p = .001$. No other significant gender differences were observed.

Second, bivariate correlational analyses were conducted to examine whether links a, b and c in the mediation models were at least correlated at $p < .25$ among boys and girls, separately. Nine simple mediation models met the $p < .25$ criterion for boys or for girls, namely: (a) participation intensity and educational status through support from activity leader; (b) duration of participation and depressive symptoms through support from activity leader; (c) duration of participation and depressive symptoms through social integration into peer group; (d) duration of participation and problematic alcohol use through support from activity leader; (e) duration of participation and problematic alcohol use through social integration into peer group; (f) duration of participation and educational status through support from activity leader; (g) duration of participation and educational status through social integration into peer group; (h) duration of participation and civic engagement through support from activity leader; (i) duration of participation and civic engagement through social integration into peer group.

Third, a moderated mediation effect of gender was demonstrated for one out of the nine models tested. The indirect effect of social integration into the activity peer group significantly mediated the relationship between duration of participation and depressive symptoms at age 18, for boys only ($B = -.10$, $SE = .03$, $Z = -3.16$, $p = .002$; $B = -.01$, $SE = .01$, $Z = -1.13$, $p = .261$, for boys and girls respectively). Duration of participation was positively related to social integration into the activity peer group ($B = 0.39$, $t(221) = 3.09$, $p = .002$), which, in turn, was negatively related to depressive symptoms ($B = -0.27$, $t(219) = 2.51$, $p = .013$).

Discussion

A growing body of research indicates that youths' participation in organized activities is an avenue through which institutions could promote their positive transition to adulthood (Feldman Farb and Matjasko 2012). However,

the processes that link participation to positive outcomes remain poorly understood (Ramey and Rose-Krasnor 2012). To address this gap, this longitudinal study examined one process that is often cited to explain the benefits of organized activities but that has not yet been adequately tested, namely the acquisition of social capital (Hansen et al. 2003). First, we examined whether two relevant social experiences, namely support from the activity leader and social integration into the activity peer group, mediated the associations between three dimensions (intensity, breadth and duration) of participation during high school and four indicators of adjustment 1 year post high school (depressive symptoms, problematic alcohol use, educational status, and civic engagement). Second, we examined whether these mediations varied according to gender. After accounting for relevant control variables, only three mediation effects were significant. More precisely, support from the activity leader mediated the association between duration of participation and problematic alcohol use and civic engagement, while social integration into the activity peer group mediated the association between duration of participation and depressive symptoms, but only among boys.

Support From the Activity Leader and Subsequent Positive Adjustment

Our results first revealed that duration of participation was positively related to support from the activity leader, which, in turn, was negatively associated with subsequent problematic alcohol use. This is consistent with previous studies documenting a negative association between organized activities during high school and subsequent substance use (Youniss et al. 1999). This result is also in line with Mahoney and Stattin (2000)'s study showing that youths who participate in highly structured activities perceive more support from the adult activity leader and show fewer antisocial behaviors than youths who participate in less structured activities (i.e., youth recreation center). Because the mediation was complete, adult support accounted for the total negative association between duration of participation and problematic alcohol use. Given that the total effect of duration of participation on problematic alcohol use was non-significant, it is possible to compare the mediated process to a line of dominos (Collins et al. 1998). The independent variable (i.e., duration of participation) is associated with a change in the mediator (i.e., increase in perceived support from the activity leader), which is then associated with a change in the dependent variable (i.e., lower problematic alcohol use). In this mediated process, everything appears to be set in motion by the duration of participation, but the proximal predictive factor of lower problematic alcohol use is actually support from the activity leader rather than

duration of participation. One implication of this is that the mediated process unfolds over time (Collins et al. 1998).

However, it is well documented that the longitudinal association between activity participation and substance use differs according to activity type (Fredricks and Eccles 2006). Sports participation has been repeatedly associated with higher alcohol use (Bartko and Eccles 2003; Denault and Poulin 2009; Eccles and Barber 1999). Furthermore, Viau and Poulin (2014) showed that this longitudinal association was significant only when youths' engagement was focused on *team sports* and when the duration of this participation was *inconstant* across adolescence. Therefore, a *persistent* duration of participation during adolescence may promote meaningful connections to adults, which, in turn, could provide supervision, guidance and norms that might shape youths' behavior. These findings underline the need for future research examining how the social processes of participation vary according to activity type.

In addition, support from the activity leader mediated the positive association between duration of participation and subsequent civic engagement. Organized activities put adolescents in contact with nonfamilial adults, thus allowing them to benefit from significant exposure to adult society and its values. These activities provide an opportunity to reflect on the ideological traditions of society, including social responsibility, at a time when youths are seeking autonomy from their parents and constructing their own future (Youniss et al. 1999). The positive association between perceived caring by adults during adolescence and civic engagement in young adulthood (e.g., voting, volunteering, etc.) has been documented before (Duke et al. 2009). Our results suggest that this process is fostered through duration of participation in organized activities. Because the mediation was partial, duration of participation was also directly positively related to later civic engagement, which suggests that organized activities give youths the opportunity to make a significant contribution and to move beyond their individual self-interest in favor of a common goal within a peer group (Sherrod, et al. 2002).

Overall, our results are consistent with studies showing a positive association between the duration of participation during high school and later adjustment, especially with regard to civic engagement (Gardner et al. 2008; Zaff et al. 2003). These results highlight the positive role played by the activity leader with regard to youth adjustment and specify that sustained participation makes the acquisition of this social capital possible.

Social Integration Into the Activity Peer Group and Boys' Later Depressive Symptoms

Duration of participation was found to be positively related to social integration into the activity peer group, which, in

turn, was associated with fewer depressive symptoms among boys at age 18. Several studies have documented the benefits of social integration for mental health and shown that these effects extend beyond adolescence (Bagwell et al. 1998; Gore 2007). Although we could not directly compare boys and girls, and can therefore not explain why only boys benefited from integration into the activity peer group, part of the answer may lie in gender differences related to the structure and function of social networks during adolescence. In terms of their adjustment, girls may rely more on their personal social network than on organized activities. Whereas girls look for intimacy in dyads or small groups, boys seek out friends who share their interests and with whom they can participate in group activities (Rose and Rudolph 2006). Since organized activities foster friendships within a peer group that shares the same interests (Schaefer et al. 2011), they may help boys meet their particular need for social relatedness. These results may also be explained by gender differences related to the types of activities that boys and girls participate in over several years. A greater number of boys than girls participate in sports activities, which involve more emotional regulation skills and are associated with fewer depressive symptoms (Larson et al. 2006; Miller and Hoffman 2009). Friendships in the context of team sports also appear to provide youths with more support (Poulin and Denault 2013), which may contribute to subsequent emotional well-being. Further studies are thus needed to better understand how gender moderates the social processes within different types of activities.

Accounting for the Other Expected Associations

Contrary to studies documenting long-term associations between intensity and breadth of participation and youth adjustment (Gardner et al. 2008; Feldman Farb and Matjasko 2012), no such results were found in our study. Given the methodological challenges of studying social experiences within youth activities, we focused on only one target activity per year, whereas the studies cited above included a greater number of activities, which might be more representative of youths' participation. Furthermore, considering only one target activity per year may have decreased the variance of breadth and intensity variables, which may have reduced the statistical power to detect their effects. However, over the long term, duration of participation might be more important than breadth and intensity of participation since activity-related benefits may be increased when youths participate in activities over several years (Mahoney et al. 2003; Zaff et al. 2003). Moreover, since social integration into the activity peer group and support from the activity leader might take time to achieve, duration of participation may be particularly important for these social experiences

(Jarrett et al. 2005). Although we could not verify whether the activity leader or peer group were the same from 1 year to another due to the measurement procedure, our results suggest that sustained participation allows adolescents to accumulate experiences of social support and integration which appear to be beneficial over the long term.

No significant effect emerged with respect to educational attainment. However, researchers have documented positive associations between the three dimensions of participation during adolescence and later educational success (Gardner et al. 2008; Mahoney et al. 2003; Zaff et al. 2003). This difference in findings may be due to variations in measures of participation dimensions and educational outcomes (Feldman Farb and Matjasko 2012). It also highlights the need to examine other aspects of youths' social relationships within activities that social capital theory and research suggest may be linked to long-term educational attainment, such as the academic values of peers (Dika and Singh 2002).

Implications for Future Research

Overall, only three (out of 12 tested) mediation models were significant and the associated effect sizes were small. Yet, the links between organized activities and youth adjustment are usually modest (Bohnert et al. 2010; Eccles and Gootman 2002; Mahoney et al. 2005), which could lessen their sustainability over time. In accordance with the literature (Roth et al. 2010), these findings underline the importance of not overstating the case that greater participation leads to improved outcomes. Rather, they illustrate the complex and nuanced associations between youth activities and adjustment and the need for future research to better understand the processes underlying these associations. In addition, because the indirect effects were stronger than the direct effects, this study supports the need for further mediation research in order to better understand how participation promotes long-term adjustment. For example, there is growing evidence demonstrating the importance of youth engagement—a psychological component of activity participation, which is also likely to be linked to intensity, duration and breadth of participation (Bohnert et al. 2010). In addition, there is a paucity of theories and research on the developmental gains that occur during participation and how they might affect outcomes. Growth experiences such as identity work, learning emotional regulation, and developing initiative and social skills (Dworkin et al. 2003) might also be relevant mediators.

Study Limitations and Strengths

Several limitations need to be considered. First, as mentioned above, only one target activity was examined, which

precluded the consideration of other relationships that youths might have developed in other activities. Second, most measures were self-reported. As a result, unmeasured personal characteristics may have influenced both the perceptions of the social experiences within the activities and the adjustment indicators. Third, the internal consistency of the scale used to measure social integration into the activity peer group was somewhat low. Fourth, the sample was homogeneous and this study should thus be replicated with youths from diverse ethnic, cultural and socio-economic backgrounds. Lastly, because dimensions of participation such as duration might depend on the number of years that the youths took part in the study, we chose to limit the sample to youths who took part in at least three of the four annual data collections during high school. Limiting the sample in this way also decreased the generalizability of the results.

Despite these limitations, this study is one of the very few that have examined: (a) the social processes that might explain the relationship between organized activities during high school and subsequent adjustment; and (b) the effect of gender on this relationship. The 7-year longitudinal study design made it possible to control for the youths' level of prior adjustment, which increased the robustness of the associations found. Furthermore, we used a detailed measure of organized activities that included intensity, duration and breadth of participation in order to provide a nuanced and accurate view of these associations.

Conclusion

Even though few links were found between the dimensions of participation in organized activities during high school and adjustment 1 year post high school, these findings support the general view that activity participation positively influences youth adjustment (Feldman Farb and Matjasko 2012). We believe that the dimensions (i.e., intensity, duration and breadth) of participation contribute to explaining how youths experience different aspects of organized activities, such as the social experiences found within them, which are related to their subsequent adjustment. However, the pathways linking organized activities to later positive adjustment remain unclear. This is an important issue for future research since a clearer understanding of these pathways could contribute to the development of activity programs aimed at helping to prepare youths for adulthood. Based on the present findings, it is advisable for school administrations and community-based organizations to promote sustained participation in organized activities in order to facilitate the acquisition of social capital, provide training for activity leaders promoting their supportive role, and adjust activity programs

to the particular needs of each gender. On this last point, it is advisable that activities aimed at boys involve a group of peers into which they can become socially integrated over time.

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