JOURNAL OF
Research on Adolescence
Society for Research on Adolescence
www.s-r-a.org

JOURNAL OF RESEARCH ON ADOLESCENCE, ***(*), 1–16

Youths' Organized Activities and Adjustment in Emerging Adulthood: A Multidimensional Conception of Participation

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This longitudinal study examined how participation in organized activities during adolescence (ages 14–17) is associated with adjustment in emerging adulthood (age 21). It investigated the contribution of three dimensions of participation: activity portfolios (i.e., specific combinations of activity types), intensity, and duration. The sample included 287 Canadian adolescents. First, distinct activity portfolios were identified using a person-centered approach. Second, differences between portfolios were examined with regard to salient indicators of adjustment in emerging adulthood: depressive symptoms, problematic alcohol use, educational status, and civic engagement. Third, the contributions of participation intensity and duration were examined. Results revealed that certain portfolios were related in distinct ways to specific outcomes and that these differences depended on intensity or duration of participation.

Organized activities include a wide range of activities (e.g., sports, arts, clubs, etc.) provided in the school setting or the community. More than 70% of youths participate in them (Mahoney, Harris, & Eccles, 2006), and their generally beneficial effects during adolescence have been widely documented (Eccles & Gootman, 2002). Given that these activities can foster important developmental processes during adolescence (e.g., Eccles & Barber, 1999), their effects are likely to extend into emerging adulthood. The few studies testing this hypothesis have demonstrated that participation in organized activities during adolescence generally predicted lower substance use, higher academic achievement, better mental health (e.g., Barber, Eccles, & Stone, 2001), and stronger civic engagement (e.g., Obradović & Masten, 2007) in emerging adulthood. Research also indicates that these longitudinal relationships could differ according to dimensions of participation such as types of activity, intensity, and duration of participation; however, further studies are needed to better understand these associations (Bohnert, Fredricks, & Randall, 2010). Moreover, no studies to date have included these three dimensions of participation and considered the involvement in specific combinations of activities (e.g., combining sports and cultural activities) in order to provide a detailed description of participation. Other methodological considerations included the aim to address the restricted focus on school extracurricular activities in the literature and the need to replicate the previous studies, mainly conducted in the United States, in diverse countries. This prospective study thus aimed to examine the longitudinal links between organized activities during adolescence and adjustment in emerging adulthood, based on a multidimensional conception of participation in school- and community-based organized activities among French Canadian youths.

Conceptualizing the Period of Emerging Adulthood

Emerging adulthood refers to the period from l8 to 25 when the transition from adolescence to adulthood takes place (Arnett, 2004). Emerging adults explore a variety of possible life directions in many areas, particularly with regard to academic and professional paths (Arnett, 2004). During these years of instability, the incidence of mental health problems such as major depression increases (Patten et al., 2006) and the prevalence of certain risky behaviors such as binge drinking peaks (Arnett & Tanner, 2006). In Québec (Canada), 15- to 24-year-olds are more likely to have a high level of psychological distress (30.6%) and to use alcohol excessively (27.9%) compared with other age groups (Lesage, Bernèche, & Bordeleau, 2010). Emerging adults' life

This study was supported by research grants from the Social Sciences and Humanities Research Council of Canada and the Fonds Québécois pour la Recherche sur la Société et la Culture to the second author. This research was conducted as part of the first author's doctoral dissertation.

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DOI: 10.1111/jora.12159

is also marked by momentous events to achieve independence such as completing school (Arnett, 2004). In most industrialized countries, attending postsecondary education is a typical experience of emerging adulthood that is positively related to future benefits like occupational status (Arnett, 2004). Furthermore, according to the positive youth development perspective (PYD: Lerner, 2004, 2009), emerging adults are empowered to make a significant contribution to the community and the civil society through their civic engagement. Civic engagement is designed to address issues of public concern and can take many forms such as voluntarism and political participation (American Psychological Association, 2014). Civic engagement is considered as an important indicator of a successful transition to adulthood that is a result of positive youth development (Lerner, 2009; Silbereisen & Lerner, 2007). The outcomes examined in this study thus aimed to capture four salient indicators of adjustment in emerging adulthood: depressive symptoms, problematic alcohol use, educational status, and civic engagement.

Considering Developmental Continuity

According to developmental psychology, human growth throughout the lifespan can be viewed as a continuous process so that past development is critical for present development and current experiments generate gains on which future development is built (Keenan & Evans, 2009). Because adolescence is seen as an important developmental period during which the acquisition of attitudes, skills, and so on leads to a successful adulthood (Eccles & Gootman, 2002), special attention should be paid to developmental contexts during adolescence that might contribute to this transition. Such examinations require accounting for developmental continuity to enhance the reliability of the observed associations. Examining the long-term contribution of organized activities requires including the previous levels of adjustment outcomes as control variables in order to not overestimate their effects. It also requires statistically controlling for factors that predict activity participation, such as gender and family structure (Eccles & Barber, 1999; Harrison & Narayan, 2003), so that the results do not reflect preexistent differences.

Organized Activities as Developmental Contexts

The positive youth development (PYD: Lerner, 2009) perspective focuses on enhancing positive characteristics among youths to better prepare them for adulthood. This perspective postulates that PYD emerges when youths' strengths are supported and developed by developmental assets (i.e., valuable resources) of the contexts in which they develop. According to the PYD perspective, organized activities have several common features which appear to be linked with positive development, including rule-guided engagement (i.e., when participation occurs within a context involving constraints and rules), adult supervision, regular participation, and the opportunity to make a significant contribution (Eccles & Gootman, 2002; Larson, 2000). Compared with unstructured leisure activities, organized activities appear to provide more support and unique opportunities for learning (Gardner, Roth, & Brooks-Gunn, 2008). For example, the opportunity to develop social relationships and an increased sense of belonging in a safe environment might contribute to explaining the psychological benefits of participation (Fredricks & Eccles, 2005). Moreover, according to the ecological model (Bronfenbrenner, 1979), one must consider the relationship between the developing person and the multiple social systems in which growth occurs to understand human development. From this perspective, organized activities can contribute to youth development specifically by providing youths with the opportunity to be involved in a plurality of contexts other than family and school (Feldman & Matjasko, 2012). Participating in these various activities becomes increasingly important during adolescence because such activities can foster identity exploration, social integration, and the acquisition of social capital (Dworkin, Larson, & Hansen, 2003). Such social bonds are thought to deter deviant behavior (Mahoney, 2000; Youniss, McLellan, Su, & Yates, 1999). Extracurricular activities might also foster a positive connection toward school which is in turn believed to support the educational attainment process (Mahoney, 2000; Mahoney, Cairns, & Farmer, 2003). Through these important developmental mechanisms, the effects of organized activities could thus be maintained beyond adolescence.

A Multidimensional Conception of Participation

Breadth of participation represents the number of types of activities (e.g., team sports, cultural activities, etc.) in which youths participate. Because different types of activities provide different opportunities for learning, breadth of participation appears to foster a wide range of developmental

experiences (Hansen, Larson, & Dworkin, 2003). Breadth of participation during adolescence is associated with higher civic engagement in adulthood (Youniss et al., 1999). However, using an aggregate index of breadth of participation overlooks important individual differences related to the selection of activities. Moreover, studies indicate that the long-term effects of participation vary according to the type of activity engaged in (e.g., Barber et al., 2001; Eccles & Barber, 1999; Fredricks & Eccles, 2006a; Hoffman, 2006). Although the categorization of activities varies among these studies, sports involvement is repeatedly linked to higher levels of risky behavior such as alcohol use, while prosocial (e.g., volunteering) and artistic activities are tied to low rates of risky behavior, school clubs and prosocial activities are related to more civic engagement, and several activity types (i.e., artistic activities, prosocial activities, sports, and school clubs) are positively associated with educational outcomes. Therefore, using an aggregate index of participation breadth overlooks the important variations related to activity types that might contribute to explaining long-term associations.

Furthermore, current research provides little knowledge on the long-term effects of particular combinations of activities. Because approximately 70% of youths participate in several activities simultaneously (Larson, Hansen, & Moneta, 2006), some researchers have suggested examining activity *portfolios* (e.g., Feldman & Matjasko, 2007; Metzger, Crean, & Forbes-Jones, 2009). To this end, some studies used arbitrary portfolios (e.g., combining sports and prosocial activities or sports and school clubs) and have found that some combinations of activities are associated in a unique way with specific indicators of long-term adjustment (e.g., Fredricks & Eccles, 2006a). However, this approach does not consider the actual heterogeneity of youths' participation. A more suitable approach involves identifying the portfolios using cluster analysis (e.g., Bartko & Eccles, 2003; Lerner, 2009; Zarrett et al., 2009). This person-centered procedure groups youths together based on their similar participation in specific types of activities. This method thus provides a more holistic view of the experiences of involvement through different activity types and allows for examination of their joint effects on adjustment (Linver, Roth, & Brooks-Gunn, 2009). Because there is considerable heterogeneity in the number of activity types within each activity portfolio, identifying these patterns of activity involvement is viewed as a method for capturing breadth of participation (Bohnert et al., 2010). Moreover, compared with an aggregate index of participation breadth, activity portfolios have the additional advantage of providing information on qualitative differences in specific combinations of activity types (Bohnert et al., 2010).

Only two studies examining the long-term effects of different portfolios derived from a cluster analysis have found that some combinations of activities during adolescence are associated in a unique way with specific indicators of adjustment in the early 20s. Specifically, portfolios that are characterized by intensive participation in sports have been linked with academic resilience among educationally vulnerable adolescents (Peck, Roeser, Zarrett, & Eccles, 2008). On the other hand, Kort-Butler and Martin (2013) found that sports-focused portfolios were linked to a lower social adjustment and more risky behaviors (e.g., binge drinking) in a normative sample. This study also showed that portfolios with greater breadth of participation promoted better social adjustment (i.e., prosocial beliefs and social responsibility) and less risky behaviors. Thus, identifying activity portfolios and comparing them with regard to long-term adjustment appears to be a promising avenue of research. Because activity types provide different developmental opportunities and are differently related with later adjustment (e.g., Hansen, Skorupski, & Arrington, 2010; Hoffman, 2006), it is likely that their shared experiences during adolescence have a particular impact on long-term adjustment.

In addition, researchers now agree on the importance of using a multidimensional measure of participation which also includes the intensity (i.e., frequency) and duration (e.g., number of years) of participation (Bohnert et al., 2010). Spending more time in an activity is likely to foster a greater number of experiences and a better integration of skills (Hansen & Larson, 2007; Larson & Verma, 1999). In general, studies have shown that intensive participation in organized activities during adolescence is associated with better social, educational, and occupational adjustment in adulthood (Gardner et al., 2008; Peck et al., 2008; Roeser & Peck, 2003). Moreover, the effects of participation could increase when this participation extends over years. Based on a few rare studies, participating in organized activities over 1 year (vs. 2 years) or 3 years (vs. 2 years or less) during high school is associated with higher educational status and civic engagement in adulthood (Gardner et al., 2008; Mahoney et al., 2003; Zaff, Moore, Papillo, & Williams, 2003). By influencing the nature of experiences acquired in the activity context (Hansen & Larson, 2007), the

intensity and duration of participation could have a unique effect on long-term adjustment.

Moreover, the way in which intensity is distributed among different types of activities could have a particular effect on adjustment. In adolescence, giving more time to prosocial activities appears to be negatively associated with substance use and dedicating more time to team sports or clubs appears to foster academic adjustment and mental health (Fredricks & Eccles, 2005; Youniss et al., 1999). In addition, the effects associated with different types of activities might depend on the duration of involvement. For example, more years of participation in sports predict higher substance use, whereas more years of participation in artistic activities predict lower substance use (Fauth, Roth, & Brooks-Gunn, 2007; Fredricks & Eccles, 2006b). The long-term effects of activity portfolios could thus vary depending on the dosage of participation. To date, studies have failed to examine this possible interaction effect because portfolios derived from cluster analysis have been based on the duration or intensity of participation in each activity type. Thus, these portfolios have aggregated two distinct dimensions of participation that may have confounded their effects.

Objectives of This Study

The first objective of this study involved identifying activity portfolios during adolescence. To this end, a cluster analysis was conducted based on youths' reports of involvement in different types of school- and community-based organized activities. The second objective consisted of comparing the portfolios in relation to salient indicators of adjustment in emerging adulthood: depressive symptoms, problematic alcohol use, educational status, and civic engagement. The third objective involved examining the contribution of the other two dimensions of participation: intensity and duration. In addition to examining their unique effect on adjustment, their potential interactions with the portfolios were also tested. It was thus possible to determine whether the differences observed between portfolios in relation to adjustment varied according to the dosage of participation. A longitudinal research design covering adolescence and emerging adulthood (from ages 12 to 21) was used to meet these objectives. Factors favouring activity participation (i.e., gender and family structure) as well as prior level of adjustment at age 12 (i.e., depressive symptoms, alcohol use, academic achievement, or prosociality) were included in the analyses as control variables.

METHOD

Participants and Research Design

The data used for this article came from a longitudinal study initiated in 2001 with 390 students (58% girls) in Grade 6 (age 12). These youths were mostly Caucasian (90%), French-speaking, and recruited from eight French-speaking schools in the Laval School Board in Quebec (Canada). They mostly came from intact families (68%). Annual family income before taxes was generally equivalent to CAN$50,000 or higher (68%). This longitudinal study covered three phases: (1) last year of elementary school (Grade 6; age 12), (2) high school (Grades 8, 9, 10, and 11; ages 14 to 17), and (3) emerging adulthood (age 21). The participation rate of the initial sample varied from 72% to 78% from ages 14 to 17 and was 79% at age 21. The sample used in the analyses was made up in two steps. First, only youths who took part in at least three of the four annual data collections during high school were selected for the examination of their activity portfolios (n = 287, 61% girls). Second, among these youths, only those who took part in the data collection at age 21 were selected for the examination of the links between participation and adjustment at age 21 (n = 254, 61% girls). Compared with the rest of the initial sample, a greater number of these youths came from intact families ($p \leq .001$) and a greater proportion of them were girls ($p \leq .05$). This sample did not differ from the rest of the initial sample with regard to family income, depressive symptoms, alcohol use, academic achievement, and prosociality at age 12.

Procedure

In Grade 6, the control variables were measured using a self-report questionnaire completed individually in the classroom under the supervision of research assistants. In Grades 8, 9, 10, and 11, participation in organized activities was assessed every year using a structured telephone interview conducted by trained research assistants. Indicators of adjustment were measured at age 21 through a self-report questionnaire. The majority of questionnaires were administered individually at the youth's home, while some questionnaires had to be mailed out (20%). From Grade 8 onwards, participants received compensation of twenty dollars in cash or as a gift certificate. This study was approved by the Internal Review Board for Ethics in Research with Humans of the authors' University.

Instruments

Participation in organized activities from Grades 8 to 11. Participation in school- and community-based organized activities during the school year (i.e., from September to May) was measured retrospectively each year in May through a structured telephone interview. First, the general criteria defining organized activities were presented to the youths: regular participation, adult supervision, and rule-guided engagement. Next, the youths identified the organized activities they had participated in during the year through a free recall procedure. Then, for each reported activity, they indicated the number of hours of participation per week and the number of months of participation during the school year.

Types of activity. The activities identified by the participants over the 4 years were classified into four types: (1) team sports, (2) individual sports, (3) cultural activities, and (4) prosocial activities. Because *team sports* (e.g., hockey) and *individual sports* (e.g., gymnastics) have their own distinct ecology providing specific experiences, these two types of sports should be differentiated (Denault & Poulin, 2007). *Cultural* activities (e.g., drama, faith-based activities, and science clubs) relate to three major domains of culture, namely art, religion, and science (Tongeron, 2000). *Prosocial* activities (e.g., student committees), for their part, aim to foster social exchanges from a community perspective (i.e., experiencing situations involving social engagement). Because there is no consensus on the best way to classify organized activities, this categorization does not fall within an existing nomenclature. It is nevertheless based on the categories that are currently used in the (mainly U.S.) literature: sports, artistic activities, academic clubs, and prosocial activities (e.g., service), which could or could not include faith-based activities (e.g., Eccles & Barber, 1999; Fredricks & Eccles, 2006a; Larson et al., 2006). However, unlike the previous literature, academic clubs and faith-based activities were uncommon in this sample. Our categorization thus grouped the cultural domains (i.e., art, religion, and science) into a single category based on the classification of extracurricular activities as documented by the Association des institutions d'enseignement secondaire (1995) in Quebec, Canada. This categorization thus appears to reflect the interests of the sample studied and also the opportunities of participation that are specific to Quebec culture. A dichotomous variable was then created for each activity type: 1 = participation in at least one activity of this type between Grade 8 and Grade 11; and 0 = no participation in this type of activity. Table 1 presents the percentages of participation for each activity type.

Participation intensity. A score for intensity of participation was obtained by applying the procedure developed by Denault and Poulin (2009a). The number of hours of participation per week was multiplied by the number of weeks of participation for each activity. For example, a youth who had taken a one-hour-per-week singing lesson from September to May obtained an intensity score of 36 hr (i.e., 1 hr × 36 weeks). The scores calculated for each activity were then added up to obtain the amount of time spent on activities during the year, all activities combined. A total intensity score was obtained by adding up the participation intensity scores obtained in Grades 8, 9, 10, and 11. Given that some youths took part in only three of the four

TABLE 1
Proportions and Chi-squared Tests Examining the Composition of Activity Portfolios

		Activity Portfolios					
	Total Sample (n = 287)	*TSF (n = 33)*	*ISF (n = 49)*	*CS (n = 117)*	*DP (n = 59)*	*NP (n = 29)*	*Chi-squared Tests*
Type of activity							
Individual sports	43.55	0.00	100.00	44.44	40.68	–	$\chi^2(3) = 85.33$***
Team sports	39.72	100.00	53.06	35.04	23.73	–	$\chi^2(3) = 57.23$***
Cultural activities	53.31	0.00	0.00	100.00	61.02	–	$\chi^2(3) = 199.85$***
Prosocial activities	24.74	21.21	10.20	0.00	100.00	–	$\chi^2(3) = 207.84$***
Demographic variables							
Boys	37.98	54.55	69.39	27.35	23.73	48.28	$\chi^2(4) = 35.87$***
Intact families	73.05			75.58		55.17	$\chi^2(1) = 58.87$**

Note. TSF = team sports–focused, ISF = individual sports–focused, CS = cultural and sports, DP = diversified and prosocial, NP = no participation.
**$p < .01$; ***$p < .001$.

data collections during the high school period, this score was then divided by the number of years of participation in the data collections (i.e., 3 or 4). The intensity score thus reflects an annual average of participation intensity (M = 111.79; SD = 105.01). Because the distribution of this score was significantly positively skewed and highly leptokurtic (skewness = 2.09; standard error of skewness = .16; kurtosis = 8.42; standard error of kurtosis = .32) and in order to use it as an independent variable in the analysis of variance, participation intensity was dichotomized based on its median (i.e., 87 hr) to obtain equivalent-sized groups. A value of 0 (n = 116) corresponds to low participation intensity (i.e., fewer than 87 hr per year), and a value of 1 (n = 115) corresponds to high participation intensity (i.e., more than 87 hr per year).

Participation duration. The number of years during which youths reported participating in at least one activity, all types combined, was calculated. Because participation was assessed over a four-year period (Grades 8–11), the value of this variable ranged from 1 to 4 (M = 2.88; SD = 1.13; skewness = −0.46; standard error of skewness = .16; kurtosis = −1.24; standard error of kurtosis = .32). Because 42% of participating youths reported 4 years of participation, this score was then dichotomized based on its natural cutoff point to obtain relatively equivalent-sized groups. A value of 1 (n = 97) corresponds to 4 years of participation (i.e., constant participation), and a value of 0 (n = 134) corresponds to 3 years or less of participation (i.e., inconstant participation). Duration thus represents the constancy of participation in activities during adolescence.

Indicators of adjustment in emerging adulthood (age 21). *Depressive symptoms.* Participants completed a French version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) validated by Fuhrer and Rouillon (1989). For the 20 items (e.g., "I felt sad"; α = .91), participants indicated how often they had experienced depressive symptoms 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]; and 3 = *most of the time or all the time* [5–7 days]). The item scores were added up, with high scores indicating more severe symptomatology. The scores were 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 & Owen, 2002): (1) frequency of distinct consumption of beer, wine, and hard liquor (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 (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 (α = .70; r = .30 to .53).

Educational status. The highest educational level was used as an indicator of educational status (UNESCO, 1997). Because several youths were still in school and had not obtained their final diploma, educational status was operationalized based on five levels: (1) noncompletion of high school (15% of sample), (2) completion of high school without pursuing further education (31%), (3) junior college (CEGEP) attendance without completion (20%), (4) completion of junior college without pursuing further education (8%), and (5) university attendance (26%).

Civic engagement. Three scales were used to create a composite score of civic engagement. First, six items (α = .90; Bobek, Zaff, Li, and Lerner (2009); Lerner, 2009) were used to assess participants' perceived civic competence (e.g., "Contacting an elected official about a problem"; 1 = *not at all capable* to 5 = *fully capable*). Second, 15 items (α = .84; Flanagan et al., 1999) were used to assess the importance participants attached to civic duty toward society, environment, and altruism (e.g., "Doing something to improve my community"; 1 = *not at all important* to 5 = *very important*). Third, 55 items (α = .94; Keeter, Zukin, Andolina, & Jenkins, 2002; Pratt, Hunsberger, Pancer, & Alisat, 2003; Smetana & Metzger, 2005) were used to calculate the average frequency of civic actions over the previous nine months (e.g., "Soliciting signatures for a petition"; 1 = *never* to 5 = *always or almost always*). The means of these three scales were calculated and standardized. A global mean score was then calculated (α = .67; r = .32 to .46).

Control variables at age 12. *Family structure.* Family structure was used as a socioeconomic indicator: 1 = intact family (67%) and 0 = other family structure (33%). A family is considered intact when both biological parents are present in the home.

Depressive symptoms. Participants completed the French version of the Children's Depression Inventory (Kovacs, 1981) validated among Quebec children (Saint-Laurent, 1990). This instrument assessed the intensity of depressive symptoms during the previous 2 weeks. The item relating to suicidal ideation was withdrawn. The scores for 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 (19%) and 0 = those reporting no alcohol use (81%).

Academic achievement. The mean of the grades in mathematics and French as recorded in the report card provided by the school ($r = .65$).

Prosociality. Four items from the Prosocial Behaviour Questionnaire (Weir, Stevenson, & Graham, 1980) were used to create a prosociality score (e.g., "Helps others"). The participants' teacher evaluated the usual frequency of each prosocial behavior (1 = *never true* to 5 = *almost always true*). A mean score was calculated ($\alpha = .85$).

Statistical Analyses

First, activity portfolios were identified by subjecting the four dichotomous variables of activity type to a hierarchical cluster analysis. Given the asymmetrical and binary nature of these variables (i.e., participation vs. nonparticipation in each activity type), the method of aggregated mean distance between classes and Jaccard's (1908) were used (Nakache & Confais, 2005). Additional analyses were run to ensure the reliability and theoretical meaningfulness of the clusters (Aldenderfer & Blashfield, 1984). A two-step cluster analysis using the log-likelihood distance measure was performed to assess the quality of the solution according to the number of clusters. Chi-square analyses of the variables used to generate the solution were performed to test for the significance of the clusters. The external validity of the portfolios was examined using chi-square analyses of theoretically related variables that were not used in the cluster analysis.

Second, given the lack of previous research examining the long-term differences between portfolios, there was no theoretical justification for the selection of a reference portfolio required to perform regression analyses. Analyses of covariance (ANCOVAs) were thus chosen to examine the differences in portfolios with regard to the indicators of adjustment in emerging adulthood. ANCOVAs were performed separately for each indicator of adjustment. The control variables (i.e., gender, family structure, and prior level of adjustment at age 12) were introduced into the analyses as covariables. Significant differences between portfolios were clarified using Bonferroni's post hoc test.

Third, controlling for the covariables, two series of ANCOVAs including interaction terms (i.e., Portfolios × Intensity or Portfolios × Duration) and Bonferroni's post hoc tests were run separately for intensity and duration of participation. Because these dimensions partly overlapped (i.e., 35% of the sample reported both high intensity and high duration; $\chi^2(1) = 76.06$, $p = .0001$), they were dealt with separately. The differences in effect size relative to intensity and duration were calculated using Guilford's procedure (Guilford, 1965, p. 189). Because participation dosage concerned only youths who participated in at least one activity, those who did not participate in any activity were excluded from these analyses.

RESULTS

Identification of Activity Portfolios

Among the 287 participants in our sample, 258 reported participating in at least one activity between Grades 8 and 11. The data collected on these participants for the four types of activities were subjected to a hierarchical cluster analysis. The results are shown in Table 1. Based on an examination of the hierarchical tree stemming from this analysis, a four-portfolio solution was retained. Chi-squared tests showed that these four portfolios differed significantly with regard to types of activity. Table 1 also presents the proportion of individuals involved in each type of activity by portfolio. Portfolios were named accordingly. The first portfolio, called *team sports–focused* (TSF), included youths who were highly involved in team sports and moderately involved in prosocial activities. The second portfolio, called *individual sports–focused* (ISF), included youths whose participation was concentrated mainly in individual sports, but also in team sports. The third portfolio, called *cultural and sports activities* (CS), included youths who were highly involved in cultural activities and moderately involved in team sports and individual sports. The fourth portfolio, called *diversified and prosocial activities* (DP), was made up of youths

who were highly involved in prosocial activities and moderately involved in the other types of activities. According to the two-step cluster analysis, this four-portfolio solution was of fair quality (average silhouette = 0.5). In addition, a fifth portfolio, called *no participation* (NP), included youths who were excluded from the cluster analysis given their nonparticipation in activities.

The identified portfolios varied with regard to the breadth of participation: The TSF and ISF portfolios were more specialized, while the CS and DP portfolios were more mixed. Demographic differences between the five portfolios that were consistent with the previous literature were also observed (see Table 1). Significantly more boys presented a portfolio focused on sports (e.g., Stubbe, Boomsma, & De Geus, 2005), and significantly more youths who participated in activities, all portfolios combined, came from intact families compared with those who did not participate in any activities (e.g., Harrison & Narayan, 2003). Activity portfolios did not differ with regard to depressive symptoms, alcohol use, academic achievement, and prosociality at age 12, which indicates that there is no multicollinearity problem between portfolios and these control variables for subsequent ANCOVAs. Furthermore, the five portfolios each contained a sufficient number of youths to allow for the use of ANCOVAs.

Differences Between Activity Portfolios With Regard to Indicators of Adjustment

Table 2 presents the means and standard deviations of indicators of adjustment at age 21 for the five activity portfolios as well as their correlations with the covariables. This table also presents the results of the ANCOVAs and post hoc tests separately for each indicator of adjustment, which are standardized or transformed variables. The results indicated that the portfolios differed with regard to *civic engagement* at age 21 with youths in the ISF portfolio being less engaged civically than those in the CS and DP portfolios. No significant difference in portfolios was observed for *depressive symptoms*, *problematic alcohol use*, or *educational status*.

Contribution of participation intensity and duration. As regards intensity, its main effect and interaction effect with the portfolios were statistically significant for *problematic alcohol use* ($F(1,220) = 6.13$, $p = .014$, $\eta_p^2 = .03$; $F(3,220) = 4.96$, $p = .002$, $\eta_p^2 = .06$, respectively). The effect of intensity was specific to the TSF portfolio: Youths

TABLE 2
Descriptive Data and Results of ANCOVAs and Post Hoc Tests Comparing Portfolios

	Correlations With Covariables (Age 12)			*Activity Portfolios M (SD)*							
Adjustment Indicators (age 21)[a]	*Gender*	*Family Structure*	*Prior Level of Adjustment*	*TSF*	*ISF*	*CS*	*DP*	*NP*	*df*	*F*	η_p^2	*Post Hoc*
Depressive symptoms	−.10	.05	.13*	0.92 (0.37)	0.66 (0.45)	0.79 (0.42)	0.80 (0.47)	0.59 (0.42)	(4, 245)	2.31	.04	–
Problematic alcohol use	.11	−.14*	.13*	−0.05 (0.91)	−0.06 (0.80)	0.11 (0.72)	−0.00 (0.75)	−0.21 (0.77)	(4, 246)	1.57	.03	–
Educational status	−.06	.18**	.50**	3.00 (1.44)	2.86 (1.34)	3.08 (1.44)	3.28 (1.46)	2.61 (1.12)	(4, 246)	0.61	.01	–
Civic engagement	−.09	−.15*	.15*	−0.04 (0.66)	−0.35 (0.82)	0.10 (0.79)	0.16 (0.71)	−0.09 (0.94)	(4, 240)	2.51*	.04	ISF < CS & DP

Note. $n = 254$. Gender (0 = girl, 1 = boy); family structure (1 = intact family, 0 = other family structure); TSF = team sports–focused, ISF = individual sports–focused, CS = cultural and sports, DP = diversified and prosocial, NP = no participation.
[a]Depressive symptoms at age 21 is a transformed variable, and other adjustment indicators at age 21 are standardized variables.
*$p < .05$; **$p < .01$.

in this portfolio whose participation was intensive reported more problematic alcohol use ($M = 0.45$; $SD = 0.65$) than those in the same portfolio who reported less intensive participation ($M = -0.59$; $SD = 0.86$) (see Figure 1). No effect of intensity was detected for the other indicators of adjustment.

As regards duration, a significant main effect was found for *depressive symptoms* ($F(1,219) = 7.32$, $p = .007$, $\eta_p^2 = .03$): Constant (vs. inconstant) duration of participation was associated with fewer depressive symptoms ($M = 0.87$; $SD = 0.45$ and $M = 0.69$; $SD = 0.45$, respectively). Moreover, a Portfolios × Duration interaction effect was observed for *problematic alcohol use* ($F(3,220) = 5.47$, $p = .001$, $\eta_p^2 = .07$). The effect of duration was specific to the TSF portfolio with youths in this portfolio whose duration of participation was constant (vs. inconstant) exhibiting more problematic alcohol use ($M = 0.50$; $SD = 0.60$ and $M = -0.58$; $SD = 0.89$, respectively) (see Figure 2). A Portfolios × Duration interaction effect was also detected for *civic engagement* ($F(3,216) = 2.84$, $p = .039$, $\eta_p^2 = .04$). Youths in the ISF portfolio ($M = -0.48$; $SD = 0.64$) were less civically engaged than youths in the CS and DP portfolios ($M = 0.21$; $SD = 0.88$ and $M = 0.06$; $SD = 0.66$, respectively) only when their duration of participation was inconstant (see Figure 3). No other significant effect was observed.

Comparisons of effect sizes revealed a significant difference between the main effects of intensity and duration on *depressive symptoms* ($t(227) = 2.44$, $p = .016$). The effect of duration was greater than that of intensity in terms of explaining the differences in long-term depressive symptoms. No significant difference in effect size was found between Portfolios × Intensity and Portfolios × Duration interaction effects for *problematic alcohol use* ($t(228) = -0.30$, $p = .763$). The effects of intensity and duration were of equivalent importance in terms of explaining the differences in long-term alcohol use between portfolios. A significant difference in effect size was observed between Portfolios × Intensity and Portfolios × Duration interaction effects for *civic engagement* ($t(224) = 2.29$, $p = 0.023$). The effect of duration was greater than that of intensity in terms of explaining the differences in portfolios with regard to civic engagement.

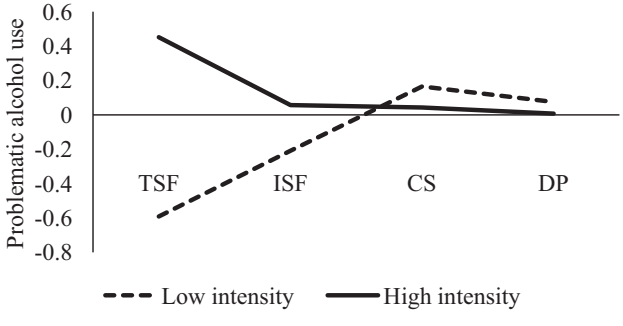

FIGURE 1 Portfolios × Intensity interaction effect for problematic alcohol use. TSF = team sports–focused, ISF = individual sports–focused, CS = cultural and sports, DP = diversified and prosocial, NP = no participation.

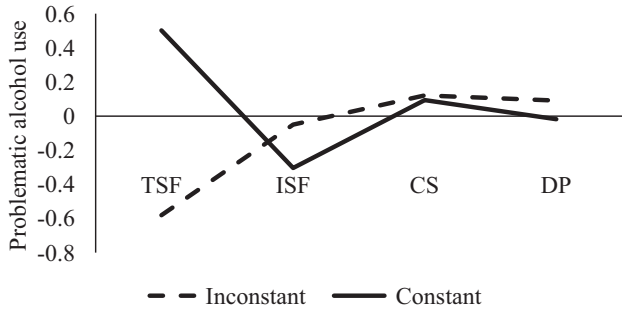

FIGURE 2 Portfolios × Duration interaction effect for problematic Alcohol Use. TSF = team sports-focused, ISF = individual sports-focused, CS = cultural and sports, DP = diversified and prosocial, NP = no participation.

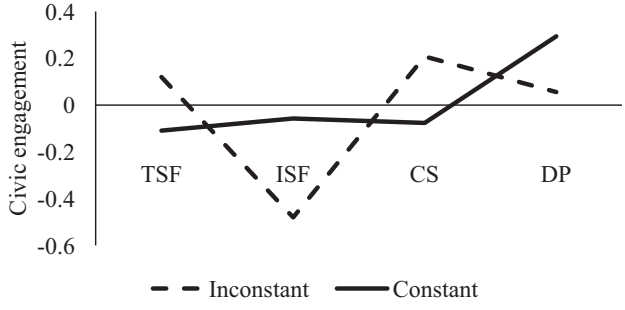

FIGURE 3 Portfolios × Duration interaction effect for civic engagement. TSF = team sports–focused, ISF = individual sports–focused, CS = cultural and sports, DP = diversified and prosocial, NP = no participation.

DISCUSSION

This study stands out from previous research by having examined how organized activities practiced during adolescence are associated with adjustment in emerging adulthood using a multidimensional conception of participation that incorporates three dimensions (i.e., activity portfolios, intensity, and duration). Moreover, it contributes to advancing knowledge in at least three ways. First, the use of a person-centered approach to identify distinct activity portfolios provides a representative and nuanced view of participation across different activity types (Bergman & Andersson, 2010). Second, comparisons between the portfolios revealed

differences in salient areas of emerging adulthood: depressive symptoms, problematic alcohol use, and civic engagement. Third, these differences in portfolios varied based on two other dimensions of participation: intensity or duration. Lastly, these effects were observed while taking into account the selection factors associated with participation (i.e., gender and family structure) and prior level of adjustment at age 12. These findings are discussed in the following sections.

Activity Portfolios During Adolescence

Cluster analysis was used to identify four portfolios of organized activities during adolescence: *team sports–focused* (TSF), *individual sports–focused* (ISF), *cultural and sports* (CS), and *diversified and prosocial activities* (DP). In addition, a fifth portfolio, called *no participation* (NP), included youths who did not participate in any organized activities. The composition of the portfolios was based on the organized activities that were freely reported by youths in this study. It thus reflects the interests and opportunities that are specific to Quebec culture. Despite this cultural specificity, the number and composition of portfolios were consistent with those in U.S. studies using cluster analysis. Usually, five portfolios are identified, including a low or noninvolved group, portfolios that are highly sports-focused, and a portfolio that is community-focused, while portfolios also vary with regard to breadth of participation, with one being highly diversified (e.g., Bartko & Eccles, 2003; Kort-Butler & Martin, 2013; Linver et al., 2009; Metzger et al., 2009). A portfolio characterized by involvement in artistic activities and sports has also been documented (Zarrett et al., 2009). Furthermore, demographic differences consistent with U.S. studies were observed: More boys presented a portfolio centered on sports, and significantly more adolescents who participated in activities, all portfolios combined, came from intact families. These demographic differences contribute to validating the portfolios based on empirical support (Aldenderfer & Blashfield, 1984). The current study thus replicates previous results and contributes to a better understanding of the constancy of portfolios among different adolescent populations.

Differences Between Activity Portfolios With Regard to Adjustment

ANCOVAs were performed to examine the differences in portfolios with regard to the indicators of adjustment in emerging adulthood. Compared with youths in mixed portfolios (i.e., CS and DP), youths in the portfolio focused on individual sports (ISF) were less civically engaged at age 21. Similarly, Kort-Butler and Martin (2013) found that youths in a sports-focused portfolio reported significantly lower levels of prosocial beliefs and social responsibility in emerging adulthood compared with the combination portfolios (i.e., highly engaged and civic-sports portfolios). Thus, in accordance with the current literature, this result illustrates the benefit of being involved in a greater variety of activities (Roth, 2006). Indeed, breadth of participation in adolescence has been positively associated with civic engagement (i.e., social involvement and political activity) in young adulthood (Fredricks & Eccles, 2006b). Breadth of participation might provide a plurality of opportunities for experiencing a wide range of socialization experiences and social networks which could promote positive development such as civic development (Fredricks & Eccles, 2006b; Larson & Verma, 1999).

Variables that are specific to the activity context and might differ according to activity type could also contribute to explaining why youths from the ISF portfolio were less civically engaged at age 21 compared with youths in the CS and DP portfolios. For example, individual sports might provide fewer opportunities for civic development such as joining a club or a team. Compared with team sports, individual sports in fact have been associated with fewer interpersonal developmental experiences (i.e., teamwork, social skills, interpersonal relationships, and adult networks) (Hansen et al., 2010). Furthermore, because the competitiveness is at the level of the individual, individual sports, even when played in a group, might foster the development of a sense of individual achievement while team sports, which require collaboration between team members for the benefit of the group, might facilitate a sense of belonging to the community. Thus, this result highlights the need to better understand the different opportunities for development according to activity type and how they relate to long-term adjustment.

Furthermore, no activity portfolio was associated with stronger civic engagement in emerging adulthood compared with the NP portfolio. This finding is consistent with a literature review recently conducted by Ramey and Rose-Krasnor (2012) which found that current research provides little evidence that specific aspects of structured activity contexts are linked to greater positive development. While participation in any activity generally appears to

foster long-term civic engagement (e.g., Gardner et al., 2008; Obradović & Masten, 2007), results vary according to the measurement of participation. For example, Zaff et al. (2003) found that youths who never participated were no less likely to vote and volunteer than those who participated occasionally. In another study that did not control for prior level of civic engagement, participation in school clubs or prosocial activities in Grade 11 was positively associated with civic engagement 2 years later after adjusting for participation in two other types of activity (i.e., sports and prosocial activities or sports and school clubs; Fredricks & Eccles, 2006a). However, the problem with the approach used was that the comparison group included both youths who did not participate in any activity at all as well as those who were involved in other types of organized activities not investigated (e.g., artistic activities). This illustrates the need for a more detailed measure of youths' participation.

As regards educational status, no difference was observed between the portfolios. This finding was unexpected because both the National Education Longitudinal Study (e.g., Marsh & Kleitman, 2002) and the Carolina Longitudinal Study (e.g., Mahoney et al., 2003) demonstrated a positive association between school-based extracurricular activities and academic achievement among youths in their early 20s. This difference could be explained by the fact that our study includes organized activities provided in the community in addition to those provided at school. Moreover, by including academic results prior to activity participation as a control variable, our analyses were stricter than those of other studies (e.g., Mahoney et al., 2003). Academic achievement in fact constitutes an important predictor of activity participation (Denault & Poulin, 2009b) and school dropout (Fortin, Royer, Potvin, Marcotte, & Yergeau, 2004). In addition, several youths in the study were still in school. Therefore, this hypothesis should be tested again a few years later, when most of them have finished their schooling.

Overall, there were few differences between the activity portfolios with regard to long-term adjustment. Because activity clusters are quite heterogeneous, this lack of findings could be explained by the heterogeneity within the portfolios. Furthermore, the youths in the portfolios characterized by participation in organized activities did not report better adjustment at age 21 than those in the NP portfolio. This result could be explained by the fact that the majority of youths in this sample were well adjusted. Participation in structured activities may be particularly important for youths who are "at risk" (e.g., poverty, problem behavior, educationally vulnerable youths, etc.) as compared to their advantaged peers (e.g., Mahoney et al., 2003; Peck et al., 2008).

Contribution of Intensity and Duration

ANCOVAs also examined the contribution of the other two dimensions of participation: intensity and duration. Results showed that youths in the ISF portfolio were indeed less civically engaged than those in the CS and DP portfolios, but only when their duration of participation was inconstant during adolescence. Therefore, this result leads us to wonder about youths' characteristics that might influence activity choice and dosage. For example, a portfolio centered on individual sports could include youths who tend to be less connected to others. During adolescence, this characteristic could be seen through less regular participation, whereas organized activities might constitute an early form of social participation (Obradović & Masten, 2007).

All portfolios combined, the analyses also revealed that constant (vs. inconstant) duration of participation was associated with fewer depressive symptoms at age 21. This finding is consistent with previous studies which have documented a positive association between participation duration and long-term psychological adjustment (e.g., Fredricks & Eccles, 2006b). Because it takes time to form supportive relationships and develop skills, regular participation might be associated with greater benefits (Eccles & Gootman, 2002).

In line with previous studies conducted among adolescents, a positive association was also observed between participation in sports (in our case, the TSF portfolio) and alcohol use when participation was intensive or of constant duration (e.g., Fauth et al., 2007; Hartmann & Massoglia, 2007). Because the dosage of participation determines the quantity and quality of experiences acquired in the activity context (Hansen & Larson, 2007), it is likely that mediating factors specific to team sports (e.g., relationship with the coach, sense of identity or belonging, etc.) contributed to explaining the longitudinal link between level of participation in the TSF portfolio and alcohol use. For example, high involvement in the TSF portfolio is likely to foster identification with the team sports culture which is associated with alcohol use (e.g., Miller & Hoffman, 2009). Furthermore, our study was in line with the current literature, which has shown that youths in sports-focused portfolios

report higher levels of risky behavior in emerging adulthood (Kort-Butler & Martin, 2013). In addition, this study contributes to a better understanding of the relationship between specific portfolios and risky behavior. Specifically, this particular relationship was found only for young people who were heavily involved in team sports. This result confirms the importance of separating team and individual sports when observing the long-term effects of participation.

Consistent with previous research on adolescence, the findings show that the contribution of participation intensity and duration varied according to the portfolio (Powell, Peet, & Peet, 2002) and the indicators of adjustment (Feldman & Matjasko, 2012). It is thus important to consider participation intensity and duration in order to grasp the complex association between organized activities and long-term adjustment. However, further research is needed to assess the experiences associated with dosage of participation and how they differ according to specific portfolios in order to account for adjustment.

Limitations and Strengths

This study has limitations. First, the small sample size and the fact that participants were mainly Caucasians from a middle-class background and Québec culture limit the generalizability of the results. Therefore, this study should be replicated with youths from diverse ethnic, cultural, and socio-economic backgrounds. Second, although the sample is quite homogeneous, not including race as a control variable is another limit to consider given that previous studies have found that portfolios of structured activities can vary according to race (e.g., Nelson & Gastic, 2009). Third, activity participation was measured during the school year, from September to June. However, some youths might have been involved in community-based activities during the summer, which could have provided additional learning experiences. Fourth, because the dimensions of participation such as duration might depend on the number of years that 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 adolescence. Limiting the sample in this way also decreases generalizability. As such, the results should be considered exploratory. Fifth, dichotomization was used to address normality failure due to the floor effect on the intensity of participation variable and the ceiling effect on the duration of participation variable. This was done to improve the ANCOVAs, but it has also resulted in a loss of variability that increases the probability of a Type II error for these two dimensions. Moreover, the cutoff for intensity of participation (i.e., fewer than 87 hr per year vs. more than 87 hr per year) was less meaningful than the one used for duration (i.e., constant vs. inconstant participation). Because youths who reported 86 and 88 hr of participation in organized activities are very similar in their intensity of participation, results for this variable should be interpreted as a general tendency (e.g., more intense participation vs. less intense participation). Sixth, given that the intensity and duration of participation partly overlapped, these participation dimensions were dealt with separately. Consequently, the triple Portfolios $\times$ Intensity $\times$ Duration interaction could not be tested. Further research is thus needed to develop a methodology which will enable this interaction effect to be explored. Seventh, compressing 4 years of activity participation into single measures of activity portfolios, intensity and duration does not account for the fine fluctuations in activity involvement over that 4-year period. As regards activity portfolios, we could not examine their stability over time and activity portfolios might change from one year to the next. Concerning intensity, we were not able to examine whether changes in intensity over the years (e.g., an increase or a decrease) affect future adaptation. As regards duration, it could also be interesting to examine the impact of the average duration of participation in each activity reported during these 4 years. These suggestions may guide future research in the field of organized activities.

Despite these limitations, this study is one of the few to have explored the long-term contribution of organized activities using a person-centered approach. The activity portfolios provided a more representative and detailed view of involvement in different activity contexts and allowed for examining their co-acting effects on adjustment. This prospective study also deepens the literature by providing a detailed measure of participation, which incorporates two additional dimensions: intensity and duration. By examining the synergetic effect of the dimensions of participation, this study responds to a need identified by previous studies (e.g., Denault & Poulin, 2009a). Moreover, by examining salient indicators of adjustment in emerging adulthood, this study enhances our knowledge on how organized activities during adolescence can contribute to adjustment during

the eventful transition to adulthood. Lastly, the longitudinal research design allowed for the statistical control of prior levels of adjustment, which strengthens the reliability of the associations observed.

CONCLUSION

This study provides additional support for the idea that youths' participation in organized activities might be an avenue through which institutions could influence their long-term adjustment (e.g., Kort-Butler & Martin, 2013). The use of a multidimensional measure of participation demonstrated that activity portfolios as well as intensity and duration of participation each contribute to later adjustment. In particular, results showed that a constant duration of participation during adolescence could be associated with fewer depressive symptoms during emerging adulthood. In addition, dimensions of participation interacted so that certain portfolios were related in distinct ways to specific outcomes depending on the dosage of participation (i.e., intensity or duration). According to the findings, an inconstant duration of participation in a portfolio focused on individual sports during adolescence could be associated with less civic engagement in emerging adulthood. Furthermore, a portfolio focused on team sports could be associated with more problematic alcohol use in emerging adulthood when the participation is intensive or of constant duration during adolescence. The results of this study are nevertheless still exploratory, and further research is needed to better understand the processes which might explain why some portfolios are associated in a unique way with particular indicators of adjustment.

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