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## Organized civic and non-civic activities as predictors of academic GPA in high school students

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### ABSTRACT

Unlike organized activities such as sports and arts, civic activities in adolescence (e.g., volunteering, student government) have been less studied in relation to school success and almost all existing evidence consists of cross-sectional findings. In a longitudinal study, 1035 pupils (64% females, 20% nonwhite,  $M_{\text{age}} = 14.21$  years) from high schools reported their engagement in organized non-civic and civic activities during the school year, dimensions of activity participation (e.g., intensity, duration, motives), and covariables (age, gender, ethnicity, SES, self-esteem, parental relationship, school motivation). Previous and end-of-year grade point average (GPA) were collected from school administrations. Results revealed that both civic and non-civic organized activities independently predicted increases in GPA over the school year, even after adjusting for all covariables.

Organized activities in adolescence, like sports and arts, have often been associated with positive youth outcomes, such as school success (e.g., Denault & Poulin, 2009; Fredricks & Eccles, 2006). However, civic activities, like volunteering, serving on student government, or ecological committees, have been less studied in relation to school success. In fact, most studies available on civic activities consist of cross-sectional findings, with only a few exceptions. More problematic, the effect of civic activities is often not distinguished from other organized non-civic activities (e.g., Fredricks & Eccles, 2010) or organized non-civic activities are not taken into account (e.g., Davila & Mora, 2007; Schmidt et al., 2012). Since researchers can hardly use experimental designs with random assignment of adolescents to civic and non-civic activities, this is a serious flaw—one that has made it impossible to determine whether civic activities or non-civic activities, or both independently, contribute to school success. Indeed, adolescents who engage in non-civic activities, like sports and arts, and adolescents who perform well at school, may be more likely to engage in civic activities (Besser, 2012; Fredricks & Eccles, 2010), thereby creating a clear self-selection bias. The present research sought to investigate these

issues and improve on the limitations of past studies by examining prospectively how engagement in civic and other non-civic activities can independently predict increases in school success over time. Moreover, we examined whether these effects were affected by dimensions of activities, (intensity, duration, the presence of an adult or not to structure the activity, or youth's motives to engage in the activity) and youth's characteristics (i.e., gender, age, race/ethnicity, or socioeconomic backgrounds).

### On organized activities

Organized activities during adolescence are conceptualized as taking place either at school as extracurricular activities or in the community. They are characterized by a regular or frequent engagement over a significant period of time (at least several weeks or months) and are delimited by specific rules and structure—often guided by the presence of an adult—and an emphasis on knowledge- or skill-building (Larson, 1999; Mahoney & Stattin, 2000). Typically, these organized activities revolve around sports and physical activities, such as swimming, hockey, or basketball, and cultural and artistic activities, such as

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painting, theater, or dance. Several studies have shown that participation in organized activities during adolescence is associated with positive educational outcomes (Fredricks & Eccles, 2006; Mahoney et al., 2003) and lower rates of internalizing and externalizing problems (Agans et al., 2014; Metzger et al., 2011).

### On civic activities

Civic engagement reflects individual or collective actions undertaken with the aim to improve others' conditions and the future of one's community (Adler & Goggin, 2005). Civic activities can pertain to themes related to democracy (e.g., defense of human rights, of minorities), ecology (e.g., protection of the environment, green committee), solidarity (e.g., helping others in need, volunteering), or pacifism (e.g., world peace, fighting against bullying). Developing civic engagement in youth has more than ever been a focus of many governments across nations (e.g., Department for Digital, Culture, Media & Sport, Office for Civil Society, 2019; Evans et al., 2019; Levine & Kawashima-Ginsberg, 2017). This trend is supported by empirical research. Overall, past studies have shown that youth might benefit tremendously from participating in civic activities. Participation in these types of activities has been associated with better psychological health indicators, such as fewer depressive symptoms (Albanesi et al., 2007), higher self-esteem (Yates & Youniss, 1996), and fewer at-risk behaviors, such as tobacco use and alcohol and drug use and misuse (Ludden, 2011). Engagement in civic activities during adolescence has also been positively associated with prosocial attitudes (e.g., cooperation, tolerance, and openness to others, Chan et al., 2014) and with greater engagement in adulthood (Finlay & Flanagan, 2013), producing citizens more involved in their community (Balsano, 2005; Flanagan & Levine, 2010; Gaventa & Barrett, 2012). It has also been argued that civic activities are associated with perseverance and school success (Astin & Sax, 1998; Lundy, 2007; Schmidt et al., 2007). However, most of the empirical data existing to this effect has been cross-sectional, making it hard to determine 1) whether highly adjusted or high-performing adolescents are more likely to engage in civic activities or 2) whether civic activities per se are more likely to facilitate school success. If the first scenario is true, the promotion of civic activities would not produce any beneficial effect on school success, whereas in the second case scenario, providing adolescents with a

greater number of opportunities to engage civically at school could become a useful tool to facilitate their school success. Therefore, the direction of this relationship is of critical importance.

Several longitudinal studies have examined the effect of participating in different organized activities (cultural, sports, volunteering) on school success, but without differentiating the impact of civic activities from other non-civic activities (for a review, see Feldman & Matjasko, 2012). For instance, in one of the first longitudinal studies on organized activities, Eccles and Barber (1999) differentiated sports, arts, and certain specific kinds of civic activities and investigated their association with school grade point average (GPA). However, they did not compare against each other which of these activities were the most predictive of GPA and they had no direct baseline measure of GPA (although they controlled for verbal and math ability). More recently, Schmidt et al. (2012) used a large and demographically diverse sample of adolescents and showed, using propensity matching scores, that service participation was associated with GPA. However, they did not control for a baseline GPA or participation in other non-civic activities. Fredricks and Eccles (2010) showed that the extent to which adolescents engaged in a variety of organized activities (i.e., breadth of activity participation) in Grade 11 predicted increases in GPA over time (GPA in 11<sup>th</sup> grade while controlling for GPA in 8<sup>th</sup> grade). However, they did not measure activity participation at baseline (i.e., 8<sup>th</sup> grade), did not distinguish civic from non-civic activities, and used self-reported GPA. Other studies have used objective markers of school success, like obtaining a college degree, and showed that it was positively associated with civic engagement in adulthood as an outcome (Nover et al., 2010). However, this does not imply that the other direction of the relationship also holds (i.e., that civic engagement facilitates obtaining a college degree). Finally, some studies have confounded civic activities, such as serving on a student government, with civic actions, such as recycling or reading newspapers (e.g., Chan et al., 2014). It is unclear from the literature whether civic *actions* can provide the same benefits as civic *activities*.

Although the above studies all provide evidence that participation in civic activities is associated with educational success, the direction of the relationship remains unclear. To our knowledge, the only study that has examined the longitudinal association between participation in civic activities (not measured in an amalgam with other organized activities) and

changes in school GPA is the one of Davila and Mora (2007). This study showed that engaging in a student government in high school and in community services (voluntary or within an academic cursus) predicted increases in school GPA in various subjects (controlling for baseline), high school diploma earned four years later, and acquiring a college degree. However, participation in other non-civic activities, such as sports or artistic activities, was not controlled for and therefore, the unique effect of civic activities could not be isolated from other organized activities. Moreover, it was unclear in that study whether the effect came from freely-chosen civic activities or required community services (but see Schmidt et al., 2007).

Other shortcomings have plagued most past studies on civic activities. Most lacked many important controls, such as youth's family socioeconomic status (e.g., parents' level of education) or students' level of psychological, social, or school adjustment, as indicated by students' self-esteem, relationship quality with parents or friends, or motivation at school. These controls are important because several factors have been identified to affect activity participation. For example, adolescents who choose to participate in extracurricular activities tend to be of higher socioeconomic status, are more likely to be European American, have higher grades, and have greater parental support than their peers (Brown & Evans, 2002; Feldman & Matjasko, 2005). Bohnert et al. (2010) classify all predictors of self-selection in activity participation in six categories, 1) demographics (age, gender, socioeconomic status, race/ethnicity), 2) individual (e.g., self-esteem, motivation for school), 3) peer (e.g., peers in the activity), 4) family (e.g., relationship quality with parents), 5) school (e.g., size, deprivation index), and 6) neighborhood (e.g., availability of opportunities of engagement). It is important to control for indicators of these categories in longitudinal studies to avoid confounds of self-selection.

Finally, there is an important literature on the characteristics of youth engaging versus not engaging in civic activities (e.g., Schmidt et al., 2012). However, studies have rarely assessed the usefulness of civic activities for adolescents with or without certain characteristics (Dotterer et al., 2007, but see Schmidt et al., 2012 or Fredricks & Eccles, 2010). Gender is one such critical factor. Adolescent males have been reported to engage less in civic activities than females (Schmidt et al., 2012). However, it is not clear whether the effect of civic activities is the same for male and female adolescents. Race/ethnicity may also play a role in how civic activities are engaged in or beneficial (Fredricks & Eccles, 2010). The inherent cultural engagement of students with an

immigration background and their commitment to embrace and adopt the rights and values of a culture distinct from their cultural heritage are forms of civic engagement that are unique to them (Jensen, 2008; Lopez & Marcelo, 2008). Racialized students may feel marginalized and oppressed by racism or discrimination (Grollman, 2012). Their participation in civic activities may engender feelings of acceptance by highlighting their capacity to contribute to society and manage and improve relevant social issues—like any other active member of their community (Watts & Flanagan, 2007). Pupils from lower socioeconomic backgrounds may have a lower access in their neighborhood to community, political, and educational resources than pupils from higher socioeconomic backgrounds (Besser, 2012; Flanagan & Levine, 2010). Because of this, they may have fewer opportunities to engage in civic activities (Frisco et al., 2004). However, civic engagement could be one way to alter their social environment and transform institutional, educational, and community practices that do not meet their needs (Ginwright & James, 2002). Yet, very little empirical evidence exists on these issues because most studies have recruited samples of white, middle class students (Chan et al., 2014). Studies on various kinds of organized activities suggest, however, that the positive effect of activity participation is generalizable across subgroups of adolescents (Fredricks & Eccles, 2006a).

Another key issue for which there is very little knowledge is the dimensions of civic activities that are more likely to promote school success in adolescence. Research has shown that organized activities that are guided by an adult provide the necessary structure, rules, and framework to catalyze the impact of the activities (Mahoney & Stattin, 2000). However, this dimension has never been formally tested with civic activities. Another dimension of activities is the engagement (Bohnert et al., 2010) or motivation with which the adolescents engage in the activities. Five decades of research from self-determination theory (Ryan & Deci, 2017) has shown that activities that are engaged in out of autonomous motivation—that is, activities that are pleasurable, or engage in because they correspond to one's core values or personal importance and goals—lead to better outcomes than activities that are engaged in for controlled reasons. Controlled reasons include introjected feelings, such as internal pressure to engage in the activity, feelings of guilt or shame, or external pressure, such as to win a certificate, a prize, or avoid punishments. Thus, civic activities that are engaged in for autonomous reasons rather than controlled reasons should be more likely to promote school success.

Finally, social capital theory (Coleman, 1988) suggests that adolescents may engage in activities because their friends also partake in these activities or in order to meet new friends or people sharing similar values. This extended social network may, in turn, provide greater interpersonal and intellectual resources, which would then facilitate school success (Eccles et al., 2003; Greenberg et al., 1983; Mahoney et al., 2003).

Contrary to most non-civic activities, certain organized civic activities can be occasional, such as taking part in a climate demonstration, a fundraising campaign, a youth convention, or a workshop on a civic theme. Are these occasional activities also useful in contributing to school success or are only organized long-term activities? Moreover, do civic actions, such as recycling or composting, also facilitate school success? There are no empirical data pertaining to these questions. We propose that occasional activities can facilitate school success because even though they are short-term activities, they can provide adolescents with new mental representations of the world. These new representations complexify their understanding of the society they live in, thereby opening them up to new perspectives onto the world and onto themselves and others. This complexification of their cognitive structures (e.g., more capacity for abstraction) is likely to facilitate their understanding of other topics and therefore provide them with greater grades (Demetriou et al., 2020). Civic actions, however, can be done automatically and are unlikely to promote this complexification of cognitive structures. For instance, recycling or composting are often done absentmindedly and mechanically or out of social modeling (e.g., parents who recycle). These actions are rarely accompanied by a reflection of the world and society when they are enacted. Therefore, contrary to occasional civic activities, simple civic actions are unlikely to predict changes in GPA.

## The present study

There were three purposes with the present study. First, we sought to examine the longitudinal association between participation in organized civic activities and increases in GPA over a school year. The present study was also designed to provide better controls for activity self-selection than what has been achieved in past research. Adolescents were therefore asked to report on other types of organized activities that they engaged in, to determine the specificity of civic activities with respect to school success compared to other organized non-civic activities. Based on past research on organized activities, it was hypothesized that both organized civic and non-civic activities would independently

predict increases in GPA over the school year. We also controlled for at least one key variable from each of the categories of predictors of self-selection in activity participation identified by Bohnert et al. (2010): 1) demographics (age, gender, race/ethnicity), 2) individual (e.g., self-esteem, motivation for school), 3) peer (e.g., peers in the activity), 4) family (e.g., relationship quality with parents, socioeconomic status including parents' level of education and occupational prestige), and 5) school (e.g., school characteristics like size and socioeconomic status).<sup>1</sup> The choice of the specific control variables were based on the fact that they have been shown to relate to either engagement in extracurricular activity (e.g., gender, race/ethnicity, socioeconomic status, relationship with parents, Brown & Evans, 2002; Feldman & Matjasko, 2005) or school success (school characteristics, age, motivation, self-esteem, Finn et al., 2005; Scherrer & Preckel, 2019). Controlling for these variables therefore statistically adjusts models for certain self-selection biases. As supplementary analyses, we also examined whether occasional civic activities could predict further increases in GPA, even after accounting for participation in long-term organized civic activities. We expected that occasional civic activities, but not civic actions, would predict changes in GPA.

The second purpose of the present study was to investigate the dimensions of civic and other activities that would predict increase in GPA. Following Bohnert et al. (2010) again, five of these dimensions were assessed: activity duration, intensity, the presence of adults during the activity, self-determined and social motives for engaging in the activity. Based on past research on organized activities, we hypothesized that intensity and presence of an adult would predict increases in GPA, but not duration. Based on self-determination theory, we expected that self-determined motives for engaging in the activity (i.e., more autonomous motives and fewer controlled motives) would predict increases in GPA and that this would be a better predictor than social motives.

A third purpose of the present study was to examine whether civic activities and other non-civic activities would equally facilitate school success for different groups of youth, that is, boys and girls, younger and older adolescents, whites and racialized individuals, and youth from high and low

<sup>1</sup>In the present research, we also included a six-item measure of the level of community availability or opportunities for civic activity participation (e.g., "My school or my community does not offer civic activities"). However, since we were not interested in the factors that contribute to civic participation in the present research, but in the effect of civic activity participation on school success, we did not use this measure. To be sure, controlling for this measure in all analyses did not affect the results.

socioeconomic backgrounds. As per past research on organized activities, we expected that the results would not be moderated by these factors, such that the effect of civic and other non-civic activities on GPA would generalize across all types of youth.

## Method

### *Participants and procedure*

Participating schools were from six different regions of the Province of Quebec, Canada. More schools were from the largest regional areas of the province in terms of population ( $n=8$ ) and fewer from medium-size regions ( $n=4$ ), for a total of 12 schools. This selection of schools was not entirely randomized, as it was based on their acceptance of participating in the study and availability of school personnel to administer the questionnaire. Despite this nonrandom selection, the representativity of the schools was adequate. There were nine public and three private schools. Four of the public schools were from high SES areas and five were from low SES areas (based on the Quebec government's school deprivation classification).

A priori power analysis revealed that to detect an increase of  $R^2$  of 1% with an  $\alpha = .05$  and a power of .80 in a multiple regression analysis that would include 10 predictors, a sample size of  $n=787$  was required. A total of 1632 high school adolescents (1049 girls and 601 boys) from Secondary I to V (Quebec school system, equivalent to Grade 7 to Grade 11) from the 12 different schools were recruited to complete a survey during the academic year. The sample had a mean age of 14.21 years ( $SD = 1.45$  year) and ranged in age from 12 to 17. A total of 20% of the adolescents identified themselves as minority (3.6% Arab, 6.3% Asian, 3.8% Latino, 4.3% African Canadian, 1% as Indigenous Canadian, and 0.9% as other). Of the 1632 adolescents, 1035 granted us access to their official school grades and these grades have been successfully obtained from the school.<sup>2</sup> Overall, 750 students had grades from both the previous and current year, allowing us to investigate the changes in grades occurring over time. Students in

secondary I (Grade 7) did not have grades from the previous year, because they were frequenting elementary school at that time.

School boards were first contacted to collaborate in this study. Our research team randomly selected them from a list of all available high schools in [blinded for review]. Other schools were added through networks of partner organizations. The study was presented to school boards and participants as a study on adolescents' activities with no specific focus on civic activities in order to avoid recruitment bias of schools or of participants. School boards were then invited to identify one or more school personnel members willing to be in charge of explaining the study and administering the questionnaire to their students. School personnel members, mostly teachers, were then trained to administer the informed consent and provide the appropriate instructions to the students. They were also informed of the potential coercive influence they might have as an authority figure on their students' consent to take part in the study and how to avoid it. A consent form was sent to parents, either printed or online, asking for their authorization for their child to participate in the study and permission to access their child's grades from the previous and current years. Students for whom parental consent had been obtained completed the questionnaire, either a paper-pencil questionnaire in a classroom setting or an online version in the school's computer room. Students who did not receive parental consent or refused to participate in the study had equivalent material to work on, which had been prepared by the teacher or school staff in charge of administering the questionnaire. The questionnaires have all been completed during the year between December and March in 2017 or 2018 and according to the availability of the schools. Year-end grades from the previous and current years were sent to our research team by the school administration at the complete end of the school year in June. This study protocol was approved by the Research Ethics Board of University of Quebec at Montreal.

### *Measures*

All items (except when explicitly mentioned) were responded to on a Likert scale ranging from 1 "Do not agree at all" to 5 "Totally agree".

#### *Organized activities*

***Civic activities.*** Instructions were drawn from Denault and Poulin (2009). Participants were first explained

<sup>2</sup>Preliminary analyses on the questionnaire responses revealed that youths of parents who did not grant us access to their grades or that their grades could not be obtained from the school were less likely to participate in civic (16% vs. 20%,  $F[1, 1630] = 3.45$ ,  $p = .06$ ,  $\eta^2 = .002$ ) and non-civic activities (48% vs. 57%,  $F[1, 1630] = 12.62$ ,  $p < .001$ ,  $\eta^2 = .008$ ) and were from lower SES backgrounds ( $M = .04$ ,  $SD = .93$  vs.  $M = -.10$ ,  $SD = .90$ ,  $F[1, 1630] = 8.00$ ,  $p = .005$ ,  $\eta^2 = .005$ ) than youths from whom grades were obtained. Each of these differences were small and accounted for less than 1% of the variance. There were no other differences on all other study variables.

that we were interested in the organized activities in which they participate. An organized activity was defined following Denault and Poulin (2009) as an activity occurring in a clear structured context (i.e., a recurrent activity occurring on a determined period of time with some kind of organized setting), outside of class hours, and with a regular frequency of participation (i.e., not an occasional activity or an activity spanning over just a few weeks). They were then explained what a civic activity was, that is, an activity that revolved around aspects of democracy (e.g., human rights defense, minorities rights, activities against discrimination, fair elections), ecology (e.g., protecting the environment, ecosystem restoration), solidarity (e.g., helping others in need, benevolence), or pacifism (e.g., on peace in the world, stopping war). Students indicated whether they had participated or were participating in such an activity during the current school year (from September) or whether they planned to participate in such an activity before the end of the school year (i.e., until June) and to describe the most important one in detail (only one civic activity was described). The variable of civic participation was thus binary, indicating whether the youth was participating or not in at least one civic activity. Participants then indicated when that activity would begin or had begun (since the beginning of the school year or before, or else since when) and whether they would engage in this activity until the end of the year and, if not, the month when they planned to stop. They also reported the frequency (e.g., number of times per week or month) and the number of hours per week or month they engaged in that activity.

From these data, the intensity of engagement over the school years (number of hours of participation per week multiplied by the number of weeks of participation) and the duration in months (number of months since they began the activity to when they will end) were calculated—two key dimensions of organized activity engagement (Bohnert et al., 2010). Finally, participants indicated whether there were adults present when they were taking part in this activity and if yes, how many. While many activities can be sponsored by an adult, these activities may still occur without the presence of an adult. For example, in many high schools, a student journal or a green committee can be initially launched by an adult, but pupils regularly meet during lunchtime or after school and work toward some objective over months without the direct presence of an adult.

**Non-civic activities.** Participants also indicated whether they were involved in other types of organized activities, other than civic activities, such as

sports and cultural or artistic activities and to describe their most important activity in detail. The variable for non-civic participation was therefore also binary, indicating whether the youth was participating or not in at least one non-civic activity. As with civic activities, they also responded to the same questions as above with respect to the duration and intensity of the activity and the presence of adults.

**Reclassification.** Two judges then read the descriptions of the civic and non-civic activities and, if necessary, recategorized them as a function of whether they were civic or not, organized activities or rather occasional activities, or just civic actions. For instance, recycling or composting was not considered a civic activity because it does not occur within an organized framework, even though it is recurrent. It is rather a civic action. Similarly, playing hockey with friends in the street was not considered a valid sports activity because it does not occur within an organized setting. If an occasional activity, a civic action, or a playful activity was described instead of an organized activity, the pupil was reassigned as not taking part in a civic or non-civic activity (sports or arts). Interrater reliability was high,  $K = .90$ . Discrepancies were resolved through discussion. Overall, such a reclassification might have introduced a small amount of error if a pupil described an invalid activity, but was participating in another valid one that was not described. This is a limitation of the methodology we used to measure activity participation.

**Motives to engage in the activities.** Participants also reported their motives to engage in their activity (civic and non-civic separately). Based on self-determination and social capital theory, two motivational aspects were measured: their self-determined motives to engage in the activity and their socially driven motives. Self-determined motivation was measured with six items, including three items assessing autonomous motives to engage in the activity (i.e., intrinsic motivation and integrated and identified regulation, e.g., “I do this activity because of the pleasure I feel when I do it”) and three items assessing controlled motives (i.e., introjected and external regulations e.g., “I do this activity to obtain a reward like a certificate or a prize or to garner up my resume”). An index of self-determination was calculated by subtracting controlled motives from autonomous motives, as commonly done by self-determination researchers (e.g., Ryan & Deci, 2017; Sheldon et al., 2017).

Participants also indicated with two items whether they were engaging in their activity because they

found people who shared the same interests as themselves or because they felt accepted and valued by the activity group. Intercorrelations between these items were  $r = .57$ ,  $p < .001$  for civic activities and  $r = .60$ ,  $p < .001$  for sports/arts/other.

### **Occasional civic activities**

Occasional activities are short (a few hours or a few days), non-recurring activities during the school year. Participants were provided with a list of 16 occasional civic activities (e.g., taking part in a demonstration like the global walk or the climate walk, participating in a youth convention, launching a fundraising campaign). Given the occasional and often unanticipated nature of these types of activities, it was deemed difficult for pupils to foresee how many of these activities they would engage in for the remaining of the school year. Therefore, occasional civic activities were measured retrospectively. To obtain a measure that would cover a greater time span, pupils were thus asked to check each of the activities in which they had taken part *in the last two years*. The sum of these activities was the measure of occasional civic activities. Given the count nature of this variable and the potential effect of outliers and floor effect, we examined both a dichotomized binary form of this variable (participating in at least one activity or not), and a winsorized form (+ 2 *SD* from the mean) with a maximum score fixed to 9 (ranging from 0 to 9 activities).

### **School grades (GPA)**

Grades from the previous and current years were obtained for each pupil. Grades were provided by the school administration directly to our research team. Grade point average in percentage (possible range from 0% to 100%, as per as per Quebec school system) was calculated for all school subjects evaluated.

### **Current civic actions**

A total of 20 items derived from the CIRCLE Civic and political health of the nation survey (Keeter et al., 2002) measuring various civic actions was used. Students indicated on a scale ranging from 0 (“Never”) to 4 (“5 times or more”) the frequency at which they did different actions during the last year, such as discuss what is going on in the social or political spheres, recycle, compost, or give away goods or clothes to a charitable organization. A total score was computed by averaging all items. Alpha was .83 in this study.

### **Control variables**

Given the longitudinal design of the present study that cannot ensure causality, it is possible that a third variable explains the potential effect of engagement in civic activities on school grades. To reduce this possibility, the statistic models were adjusted to control for the effect of other variables that could influence school grades over time.

**Self-esteem.** The 10-item Rosenberg Self-Esteem scale (Rosenberg, 1965) was used to control for self-esteem. Alpha was .73.

**School self-determined motivation.** The 10-item version of the Academic Motivation scale (Vallerand et al., 1989) measuring the continuum of self-determined motivation for school, including intrinsic motivation, identified regulation, introjected regulation, external regulation, and amotivation, was used (e.g., “I go to school because I really like going to school” [intrinsic motivation] or “I go to school to have a better salary later on” [external regulation]). An index of self-determined motivation (also called relative autonomy index) was calculated by subtracting the controlled motivations from the autonomous motivations (Ryan & Deci, 2017; Sheldon et al., 2017) using the recommended algorithm for this scale (e.g., Fortier et al., 1995):  $\text{intrinsic}^*2 + \text{identified}^*1 + (\text{introjected}^*-1 + \text{external}^*-1)/2 + \text{amotivation}^*-2$ .<sup>3</sup>

**Relationship quality with parents.** The quality of relationship with each parent was measured with six items from the Network Relationships Inventory – Relationship Qualities version (Buhrmester & Furman, 2008). The relationship quality with the father and the mother were measured separately. An index of the quality of the relationship with the parents was then calculated by averaging the score for the relational quality of both the mother and the father. Alphas were .88 and .87 for the quality of the relationships

<sup>3</sup>There is a recent debate in the self-determination theory literature as to whether use or not a relative autonomy index of motivation. Some researchers have suggested to use instead each dimension separately (autonomous and controlled regulations) or to use more complex analyses, such as bi-factor models, permitting to examine both the effect of each single regulation separately as well as a general factor accounting for the quantity of motivation or global self-determination. The choice of the scoring method depends on the research questions and other methodological concerns, such as sample size and design (e.g., Howard et al., 2020). In this study, we considered a relative autonomy index as the most parsimonious solution for both the motivation scale and the motives to engage in an organized activity, given that these variables were only used as control variables or were examined among other activity characteristics. For full transparency, however, we will provide the results of the separate autonomy and controlled dimensions of motivation in the analyses.

**Table 1.** Distribution of end-of-year grades and demographics per category of activity participation.

	Civic and non-civic participation	Civic participation only	Non-civic participation only	No activity participation	<i>F</i> (3, 1031)	$\eta^2$
Number of youths (%)	12.1%	7.7%	44.8%	35.4%	–	–
Previous year grades (mean on 100% and <i>SD</i> ) <sup>1</sup>	82.82 (6.39) <sub>a</sub>	81.26 (7.44) <sub>a</sub>	80.82 (7.20) <sub>a</sub>	75.78 (7.99) <sub>b</sub>	33.14, <i>p</i> < .001	.12
End-of-year grades (mean on 100% and <i>SD</i> )	83.89 (6.22) <sub>a</sub>	81.68 (6.50) <sub>ab</sub>	80.34 (7.82) <sub>b</sub>	75.16 (8.97) <sub>c</sub>	51.97, <i>p</i> < .001	.13
Age (mean and <i>SD</i> )	14.47 <sub>a</sub> (1.42)	14.34 <sub>ab</sub> (1.52)	14.01 <sub>b</sub> (1.36)	14.43 <sub>a</sub> (1.44)	7.28, <i>p</i> < .001	.021
Gender (% males)	17% <sub>a</sub>	24% <sub>ab</sub>	37% <sub>bc</sub>	42% <sub>c</sub>	11.00, <i>p</i> < .001	.031
Ethnicity (% nonwhites)	26% <sub>ab</sub>	34% <sub>a</sub>	18% <sub>b</sub>	23% <sub>ab</sub>	4.22, <i>p</i> = .006	.012
SES (mean <i>z</i> score and <i>SD</i> )	.38 (.84) <sub>a</sub>	.10 (.88) <sub>a</sub>	.19 (.88) <sub>a</sub>	–.27 (.96) <sub>b</sub>	24.33, <i>p</i> < .001	.065

Note. *N* = 1035; *SD* = Standard Deviation. Proportions or means that do not share a common subscript differ at *p* < .05 following a Bonferroni correction.

<sup>1</sup> *N* = 750.

with the father and the mother, respectively, and .88 for the averaged index.

**Sociodemographic variables.** Pupils' age and gender, and parents' level of education and occupation (biological mother and father or person generally taking care of the child and having this role) as reported by the child were collected. Occupational status was coded using Ganzeboom's coding scheme based on the ISCO-08 classification (Ganzeboom, 2010; International Labour Organization, 2012). Raters' agreement was satisfactory (*k* = .85, based on 25% of the material). Mother's and father's level of education was correlated at *r* = .46 and *r* = .49 with mother's and father's occupational status, respectively, and were averaged into a single variable representing parents' SES ( $\alpha$  = .77).

### Statistical analyses

All analyses were adjusted for variance among schools from which the participants were recruited. Following recommendations from McNeish and Stapleton (2016) when the number of clusters is small (< 20), a total of *k* – 1 dummy-coded variables representing the recruited schools were added to Step 1 of each hierarchical multiple regression analysis to account for the nesting nature of the data (similar to the control provided by multilevel analyses). In each hierarchical regression analysis, control variables were entered in Step 1 and the tested variables of interest were entered in a second step to investigate their added explained variance. When changes in GPA were examined, end-of-year GPA was used as dependent variable, while previous year GPA was controlled for at Step 1. Results representing change in GPA therefore correspond to a residualized change score.

## Results

### Preliminary analyses

Table 1 reports descriptive statistics among adolescents participating or not in civic and non-civic activities. Results showed that only 19.8 % of students reported participating in an organized civic activity during the academic year. Comparatively, 56.9% of students reported participating in an organized sport, cultural, or artistic activity. There were significant differences in end-of-year GPA among youth participating in both civic and non-civic organized activities or civic activities only compared to those participating in non-civic activities only or with no activity participation. Youth participating in non-civic activities only also had better grades than those with no activity participation. For previous year GPA, youth participating in both types of activity or in at least one type of activity did not differ against each other, but all had significantly better grades than youth not participating in any activity. There were also smaller differences on age, gender, and ethnicity, such that adolescents who engaged only in non-civic activities were slightly younger and white, and male adolescents tended to engage more in non-civic activities or had no activity participation compared to females. A larger difference was found on SES, such that adolescents from low SES backgrounds were the most likely to report no activity participation.

### Main regression analyses

Correlational statistics among study variables are presented in the supplementary file (see Table S1). To examine the relation between participation in civic activities and academic success, a multiple regression analysis was conducted using end-of-year grades as

**Table 2.** Associations between organized civic and non-civic activities and end of the year GPA.

Steps	Independent variables	End of the year GPA (N = 1034)			Increases in GPA (N = 750)		
		B (SE)	$\beta$	t(1013)	B (SE)	$\beta$	t(728)
Step 1	Previous year GPA	–	–	–	.85 (.022)	.82	38.12**
	Age	–0.42 (.18)	–.070	–2.33*	0.40 (.14)	.060	2.84
	Sex (F = 0; M = 1)	–4.03 (.47)	–.23	–8.51**	–1.73 (.32)	–.10	–5.37**
	Ethnicity (0 = White)	–0.06 (.62)	–.003	–.089	–.058 (.39)	–.003	–.148
	Family SES	2.37 (.27)	.26	8.88**	0.61 (.19)	.068	3.27**
	Self-esteem	1.73 (.35)	.14	5.02**	0.37 (.23)	.032	1.64
	School motivation	0.44 (.06)	.20	7.19**	0.12 (.041)	.058	3.04**
	Parents' relationship	0.46 (.31)	.041	1.46	0.63 (.20)	.059	3.08**
	Step $R^2 = .363^{**}$			Step $R^2 = .789^{**}$			
Step 2	Civic activities	2.76 (.57)	.13	4.85**	0.77 (.38)	.037	2.03*
	Non-civic activities	2.37 (.46)	.14	5.20**	0.67 (.31)	.040	2.16*
	Change $R^2 = .031^{**}$			Change $R^2 = .01^*$			

Note. \* $p < .05$ , \*\* $p < .01$ .

the dependent variable. The independent variables were sociodemographic and control variables, which were all entered in the first step of the regression. In Step 2, participation in civic and non-civic activities were entered. Results shown in Table 2 indicated that civic activities as well as non-civic activities were both positively and significantly associated with academic grades, independently from one another. This result was obtained after controlling for sociodemographic variables, as well as self-esteem, academic motivation, and quality of parental relationships.

The same regression analysis was conducted, this time controlling for the effect of GPA from the previous year. This allowed for the examination of the direction of the effect of youth's activities on their academic grades. The results also shown in Table 3 indicated that participation in an organized civic activity predicted increases in academic grades during the year, independently of non-civic activities and control variables. Participation in non-civic activities also independently predicted grade increases. Participation in civic and non-civic activities each predicted 0.5% of variance in increase in academic grades over one year,  $F(1, 729) = 4.12$ ,  $p < .05$  and  $F(1, 729) = 4.67$ ,  $p < .05$ , respectively, corresponding to an increase of 0.77 and 0.67 per year in grades for adolescents participating in a civic and a non-civic activity, respectively. We also examined the interaction between practicing an organized civic and a non-civic activity. The interaction was not significant,  $t(729) = 1.69$ ,  $p = .091$ , thus, it seems best to describe the effect of civic and non-civic activities as two independent and additive effects.

Given that we were not granted access to the grades of a certain number of pupils and that pupils in Secondary I did not have previous-year GPA, we imputed their values for the full sample using multiple imputation (datasets = 50). Results of the above regressions remained the same (see Table S2).

### Youth characteristics

The same regression was conducted again, this time adding interaction terms between civic participation and youth's gender, age, ethnicity, SES, and grades from the previous year. To gain greater power, these interactions were examined separately, but each included two interaction terms, one with civic participation and a moderator and another with non-civic participation with that same moderator. All interactions were non-significant, indicating that both civic and non-civic participation were equally effective at increasing grades in all youth, regardless of youth's investigated characteristics and backgrounds.

### Analyses of activity dimensions

To examine whether dimensions of organized civic activities (e.g., intensity, duration, presence of an adult, motives) would predict increases in grades over the year, only data from pupils who participated in an organized civic activity during the year ( $n = 199$  with current year grades and  $n = 146$  with grades from both the previous and current years) were analyzed. Similar regression analyses to the main ones presented above were conducted, this time controlling for participation in non-civic activities at Step 1 and including all the civic activity dimensions at Step 2. Results (see Table 3) showed that intensity and duration were not significant predictors of current grades or changes in grades. However, the presence of at least one adult during the activity was a significant predictor of current grades,  $\beta = .34$ ,  $t(174) = 2.59$ ,  $p = .010$ , and of grade increases over the school year. Self-determined motives were also a significant predictor of the increase in academic grades during the year. Surprisingly, social motives negatively predicted changes in grades. We further probed this unexpected result by examining social motives alone, without

**Table 3.** Civic and non-civic activity dimensions predicting increases in GPA.

Steps	Independent variables	Civic activity dimensions predicting increases in GPA N = 146			Non-civic activity dimensions predicting increases in GPA N = 403		
		B (SE)	$\beta$	t(121)	B (SE)	$\beta$	t(378)
Step 1	Same control variables shown in Step 1 in Table 2	$R^2 = .83, F(19, 127) = 34.69^{**}$			$R^2 = .80, F(19, 383) = 84.98^{**}$		
Step 2	Intensity	-.003 (.004)	-.031	-.76	.001 (.001)	.026	1.07
	Duration	.009 (.016)	-.023	.49	.001 (.006)	-.001	-0.05
	Adult presence	2.57 (1.16)	.19	2.23*	-.34 (.53)	-.015	-0.64
	Social motives	-.76 (.25)	-.13	-3.09**	-.30 (.16)	-.046	-1.89
	Self-determined motives	.78 (.25)	.14	3.18**	.11 (.19)	.015	0.59
	$R^2$ change	$R^2 = .024, F(5, 121) = 4.02, p = .002$			$R^2 = .003, F(5, 378) = 1.06, p = .38$		

Note. Model at Step 1 was adjusted for all control variables shown in Table 2, including GPA from previous year.

\* $p < .05$ , \*\* $p < .01$ .

including the other activity dimensions to ensure that this negative association was not due to a distortion effect. The negative and significant association of social motives was maintained, even after excluding other activity dimensions. Overall, presence of an adult predicted an increase of 2.5% in grades over the year,  $F(1, 122) = 4.94, p = .028$  and self-determined motives a further increase of 3.4% in grades,  $F(1, 121) = 7.10, p = .009$ .

The same regressions were conducted to examine non-civic activity dimensions, controlling for participation in civic activities ( $n = 569$  with current year grades and  $n = 403$  with grades from both the previous and current year). Results showed that duration,  $\beta = .070, t(543) = 2.04, p = .042$ , and self-determined motives,  $\beta = .074, t(543) = 2.08, p = .038$ , were positively associated with current year grades. However, no dimensions predicted increases in grades over the year.<sup>4</sup>

### Participation in occasional civic activities

The association between participation in occasional civic activities (binary and winsorized) and grades was examined. A total of 87.2% of students reported having engaged in at least one occasional organized civic activity in the last two years. The same main regression was conducted again (controlling for previous year GPA), this time adding participation in

occasional civic activities (binary form) to the equation in the last step. Results showed that participation in an occasional civic activity predicted a supplemental increase in GPA,  $B = 1.00, SE = .46, \beta = .078, t(729) = 2.17, p = .031$ , accounting for 0.5% of the variance of GPA increases over the year, over and above participation in organized activities (civic and non-civic activities). The same regression was conducted again with the winsorized form of the variable (0 to 9 activities), but it was unrelated to residualized changes in grades  $t(729) = 0.67, p = .50$ . Thus, although the winsorized form was more strongly associated with grades than the binary one (see Table S1), change in grades was best predicted by engaging in at least one activity vs. no activity.

### Civic activities or civic actions?

In order to establish whether it was the practice of a civic activity or the practice of civic actions (e.g., recycling, composting) that was related to GPA, the same main regression analysis (including all control variables) was performed while controlling for the frequency of civic actions. The results indicated that civic actions were not related to GPA. This was true even when participation in organized civic or non-civic activities were omitted from the equation,  $\beta = -.033, t(735) = -1.78$ .<sup>5</sup> Moreover, controlling for civic actions did not change the statistical significance of participation in civic or non-civic activities on GPA ( $ps < .05$ ).

<sup>4</sup>We analyzed the data again using separate autonomous and controlled measures. For motivation at school, controlling for these two constructs did not change any of the result. For the autonomous and controlled motives for the civic activity, results showed that there was a small positive significant effect of autonomous motives ( $t = 2.84, p = .005$ ) and a small negative marginally significant effect for controlled motives ( $t = -1.75, p = .083$ ) on residualized changes in grades. Therefore, it seems more appropriate and powerful to combine these effects in a relative autonomy index ( $t = 3.18, p = .002$ ).

<sup>5</sup>An alternative explanation would be that civic actions are undertaken within the framework of the organized civic activities (or as a consequence of them). If that was the case, there would be an association between civic actions and grades when excluding the variable accounting for participation in civic activities. But this was not the case.

## Discussion

The purpose of the present research was to examine the prospective effect of youth's participation in civic activities, compared to non-civic activities, on school GPA. Moreover, the present research sought to investigate multiple dimensions of activity participation. Since research on activity participation in youth is almost always affected by self-selection bias, the present study controlled for several confounding variables by recruiting pupils from a diversity of schools and by controlling for key variables. The current study also investigated whether the effect of civic activity participation would be the same for youth with different characteristics.

Overall, results showed that participation in both civic and non-civic activities independently predicted increases in GPA over the school year. Moreover, this effect was not moderated by gender, age, ethnicity, or SES. This independence of civic and non-civic activities in predicting increases in GPA is in line with past research that has shown that activity breadth (of all sort) is linked to school success (Bohnert et al., 2010; Denault & Poulin, 2009). This is the first study to our knowledge to highlight that civic activity participation can predict changes in GPA over time while accounting for the effect of other non-civic activities. Moreover, this is one of the few studies to control for as many potential confounding variables at the same time.

The effect of organized activities may seem small as they only accounted for 1% of changes in GPA over the year (1.44% increase to be more precise). However, the model tested was very stringent with all its control variables. Thus, civic and non-civic activities are likely to have already affected some of the control variables at the time of the study, such as school motivation or self-esteem and these variables may then act as partial mediators of the relationship between activity participation and increases in GPA. Furthermore, activity participation is likely to have influenced previous years grades and controlling for these canceled out this effect. Moreover, this 1% increase represents the amount of grade increases per one year. It is unknown if this effect is linear, stable, and cumulative over years. However, if it is the case, this could represent an important difference in grades over the full high school period. Finally, this 1% increase is the average increase for all youth. The current findings showed that activity dimensions are key variables to consider. Of importance, civic activities that are actively supervised by an adult and those engaged in out of self-determined motives are more

likely to facilitate grade increases. This is consistent with findings that showed that organized activities that include adult's supervision have better structures and are therefore more beneficial to youth (Denault & Poulin, 2009; Larson, 1999). Results of the present study showed that together these two dimensions of civic activity can represent a further increase of 5.8% in grades among youth participating in organized civic activities.

There were also surprising results regarding activity dimensions and motives. First, intensity of both civic and non-civic activities was not associated with grades and did not predict change in grades. Past studies had highlighted that youth who spend more time in activities are more likely to be exposed to factors promoting positive development (Gardner et al. 2008). However, most studies investigating activity intensity have often assessed it by combining the intensity of multiple activities (e.g., Denault & Poulin, 2009). In the present research, the intensity of only one activity was examined, which might have reduced its predictive power. Civic activity duration was not associated with grades, but non-civic activity duration was, which replicates past research (e.g., Darling, 2005). A second surprising result was the lack of relationship between adult presence in non-civic activities and grades. Adult supervision is often part of the definition of organized activities (Larson, 1999). However, adult presence has rarely been formally tested, especially as a function of activity type. In the present research, we investigate this dimension by considering activities that may not include the presence of an adult during activity engagement. This dimension clearly showed to be important for civic activities, but result was not significant for non-civic activities. However, closer examination of the proportion of youth engaging in non-civic activities without the presence of an adult showed to be very small (11.2%) as compared to those engaging in a civic activity without adult supervision (39.9%). This lack of variability in non-civic activities could explain the null result obtained. Finally, a third surprising result is the negative association between social motives and grades. It is important to note that we did not measure the number of friends partaking to the activity or the quality of the relationship with these friends, which have been shown to be associated with better academic functioning (e.g., Poulin & Denault, 2013). Rather, we evaluated youth's motives to join an activity with items tapping into feeling accepted by the group or meeting people with similar interests. These items might actually reflect a social-deficit orientation,

with youth endorsing them perhaps because they do not feel accepted in other groups or do not find kinship elsewhere. Pupils who show such an orientation might have lower academic functioning, which would explain the negative association between our measure of social motives and grades.

### ***What are the mechanisms implicated?***

One lingering question, however, is why these organized activities are associated with such positive effects on grades. Traditional responses to this question have been that 1) more time spent in structured activities often means less time in problematic ones (Mahoney & Stattin, 2000), 2) that engagement in organized activities is an opportunity to develop effort and persistence (Eccles & Barber, 1999), 3) which can then facilitate identity development (Mahoney et al., 2006), or 4) that these activities can provide youth with a supportive adult (Fredricks & Eccles, 2005) or peer group (Bohnert et al., 2007). The present findings partly support these explanations. While the presence of a peer group (herein social motives) in civic activities did not positively contribute to academic success, the presence of an adult during these activities significantly predicted increases in grades over time. Both civic and non-civic organized activities predicted changes in grades and the duration of non-civic activities was significantly associated with current grades, suggesting that effort and persistence as displayed in a long-term engagement in organized activities may facilitate school success. Moreover, self-determined motives to engage in civic and non-civic activities were shown to significantly predict GPA increases, pointing out that activities that are engaged in out of an intrinsic or self-determined fashion may serve to build one's identity and self in a more coherent and integrated manner (Mahoney et al., 2006). However, occasional civic activities were also associated with grades and predicted changes in grades over time. These activities do not represent an effort displayed over a considerable amount of time and therefore depart from a perseverance explanation. Moreover, they do not necessarily involve the presence of an adult, although many of them are at least typically sponsored by one. Finally, occasional activities may allow youth to spend more time in adequate activities and less in unstructured or problematic ones, which does not refute the explanation of reduced delinquency (Mahoney & Stattin, 2000).

We would like, however, to provide a different explanation as to why civic activities may be

specifically useful to youth. We believe that civic activities may help forge new mental representations about the world and the self, which complexify youth's cognitive resources and provide them with a greater diversity of ways of integrating and understanding school subjects. Civic activities that allow one to learn more about political conflicts or specific populations (e.g., the elderly, migrants, or people without homes) facilitate a world vision that is more nuanced, diminish stereotypes, stimulate a greater openness toward divergent points of view, and encourage greater tolerance of the differences (Wagner & Mathison, 2015). Such more flexible mental representations are likely to facilitate school learning (Bowman, 2011). This may explain why occasional civic activities also predicted grade increases, even over and above participation in organized civic and non-civic activities. In most non-civic activities, youth may need a frequent exposure to an activity context to withdraw positive developmental outcomes from their activity participation (Hansen & Larson, 2007; Larson & Verma, 1999). However, given the potentially greater cognitive skills provided by civic activities, even occasional or one-time event might be enough to procure novel mental representations of the world and forge new mental complexities and thinking styles. This is also supported by the fact that civic actions were not associated with grades. Civic actions, such as recycling, composting, or turning off the lights to preserve energy, may be done automatically and the frequency at which these actions are done does not appear as a valid marker of a cognitive change afforded by new civic knowledge. Obviously, more research is needed to ascertain this alternative explanation.

### ***Implications***

The present research has important implications for educational settings. The present findings suggest that the addition of civic activity as extracurricular activities or as community activities to youth's schedule could help them develop greater cognitive skills, sustain their engagement at school, and increase their grades. It therefore appears mandatory to increase the offer of civic activities at school and provide greater access to community organizations involved in civic actions, such as ecology, social justice, and pacifism. Partnerships between schools and such organizations appear as a fruitful avenue to bolster school's civic activity opportunities with community organizations' expertise in this area. While organized civic activities

that are engaged in with a regular frequency of participation are effective at increasing youth's grades, even occasional activities appear to be useful to this extent. This makes partnerships with community organizations even easier, as long-term collaborations are not always possible within school settings. The programming of occasional activities at school as delivered by community organizations could therefore be a rapid and effective way to increase the offer of civic activities, without monopolizing too many resources, which are often scarce in educational settings. However, the way these activities are presented to youth matter. As shown in the present research, the presence of an adult who ensures structure to the activity appears mandatory. Moreover, certain practices may not be well-advised. For instance, school intervenient sometimes use rewards or certificates as incentive to encourage pupils to engage in civic activities. However, such external rewards have long been known to increase controlled motivation (Deci et al., 1999). The present research further showed that this type of motivation can hinder the positive effect of civic engagement on grades.

### Limitations

The present research is limited in a number of ways. First, the longitudinal design used allowed us to describe the direction of the effect of organized activity on GPA, but still prevents us from speaking about causality. While we controlled for several potential confounders, there is still a possibility that an unmeasured variable could account for the effect of activity participation on GPA. Experimental designs with proper random assignment would be needed to examine the causal effect of civic and non-civic participation. Second, the present sample was only partly representative of the high school student population in Quebec, Canada.. Sampling was not random and participating schools providing more organized activities to their pupils might have been more inclined to participate in our study. This might have biased the present results and, therefore, external validity is limited by this possibility. Third, only 20% of our sample identified as a minority and there were too few pupils in each ethnic group to perform statistical analyses for each group. Furthermore, we did not investigate whether these students were of first, second, or third immigrant generation and this can be a significant moderating effect (e.g., Camacho & Fuligni, 2015). While we did not find any moderating effect of ethnicity in the current study, future research will be

needed to replicate the current findings within a more diversified sample in terms of ethnicity.

### Conclusion

Overall, the present research provided evidence that organized civic activities and occasional civic activities have a unique effect on academic success, one that is independent of non-civic activities. Moreover, the present research ascertained this finding while controlling for a host of potentially confounding variables and moderators. Both the presence of an adult and self-determined motives appear to be key civic activity dimensions. Finally, future research may do well in investigating the unique long-term effect that civic activities may have in the cognitive development of youth as compared to other types of activities.

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### Conflict of interest

The authors declare that they have no conflict of interest.

### Consent to participate

Informed consent was obtained from all individual participants included in the study and from their parents/tutors.

### Ethics approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the University of Quebec at Montreal.

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## Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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