

Cégep students' obstacles to participation in sports

PAREA 2012-014

Popularization article

Jérôme Leriche, Ph.D.

Physical education department, Cégep de Sherbrooke

Frédéric Walczak, M.Sc.

Physical education department, Cégep de Trois-Rivières

The current research was funded by the ministère de l'Enseignement supérieur, de la Recherche et de la Science through the Programme d'aide à la recherche sur l'enseignement et l'apprentissage (PAREA).

The World Health Organization (WHO) considers sedentariness to be the fourth mortality risk factor in the whole world (2009). Lifestyles and, in particular, participation in sports are thus essential elements in slowing down obesity (Agence de la santé publique du Canada, 2010; Fishburne and Hickson, 2005; WHO, 2010). Despite unanimous recognition of the benefits of practicing sports, the physical condition of young Canadians has significantly deteriorated since the beginning of the 1980s (Tremblay, Shields, Laviolette, Craig, Janssen and Gorber, 2010); Cégep students have the same tendency (Chiasson, 2004). Cégep students follow a worldwide trend leaning towards sedentariness. Still, Cégep degree courses include three compulsory physical education (PE) courses, one of which promotes and emphasizes a healthy and active lifestyle. Yet, research on the subject suggest that a majority of students are not active enough. This sedentariness problem is at the heart of this study. Our project was funded by the Programme d'aide à la recherche sur l'enseignement et l'apprentissage (PAREA). It was completed with the help of students from two different college establishments: the Cégep de Sherbrooke and the Cégep de Trois-Rivières.

The general goal of this research is **to describe and understand the obstacles and the conditions for Cégep students to regularly participate in sports**. We are also working on two specific objectives:

- To describe and understand the physical, sociological and motivational obstacles to regular participation in sports for Cégep students;
- To describe and understand the conditions that drive regular participation in sports for Cégep students.

To follow through on this research, we read the scientific literature associated with the physical condition of young adults, on obstacles to participation in physical activity and on motivation. We will present a summary of elements of note from this literature review.

LITERATURE REVIEW

The degradation of young adults' physical condition

The sedentariness tendency is common around the world and starts at a very early age. The Comité scientifique de Kino-Québec (2011) highlights that in the last few decades, the physical condition of young people has decreased in Québec. A Quebec enquiry in the health of high school students confirms that boys and girls of this age group are not very active but pointed out the positive impact of active transportation in the tally of physical activity (Traoré, Nolin and Pica, 2012). Thus, only 16% of high school students are active enough in their hobbies but the proportion reaches 30% if you add active transportation (walking, cycling for various trips, etc). At Cégep, Chiasson (2003) showed that physical condition and body composition of students decreased year after year. However, a longitudinal study by Lemoyne (2012) with Cégep students showed the significant contribution of the PE courses (specifically the third one) in making students more active.

Obstacles to practicing physical activity in the literature

- **Time**

Lack of time is often one of the factors cited first as an obstacle to practicing sports (Boiché and Sarrazin, 2009; Comité scientifique de Kino-Québec, 2011, Dishman and Sallis, 1994 ; Lemoyne, 2012; Sechrist, Walker, and Pender, 1987). However, a different study shows that lack of time is more of an excuse used by people (Sallis and Owen, 1999). Other studies also state that, for students, holding a job is not a significant obstacle to practicing sports (Traoré, Nolin and Pica, 2012; Grubbs and Carter, 2002).

- **Money**

The financial aspect is another obstacle found in the literature. Sallis, Alcaraz, McKenzie and Hovell (1999) highlight that the most important factor in maintaining or not an active lifestyle is parental financial resources and whether they support participation in sports. Other studies showed that lack of money is an obstacle (Nahas, Goldfine and Collins, 2003) as is growing up in a poorer environment (Traoré, Nolin and Pica, 2012).

- **Accessibility**

A literature review by l'Institut national de santé publique du Québec clearly shows that the surroundings have an impact on participation to physical activities (PA) and that it is positively associated to PA, particularly with teenagers (Bergeron and Reyburn, 2010). Access to infrastructure in school establishments during periods when students are not in class would also significantly increase participation to PA (Comité scientifique de Kino-Québec, 2011).

- **Support from family and close relations**

Many studies have presented a significant association between PA and support offered by close relations (Bois and Sarrazin, 2006 ; Hedstrom and Gould, 2004 ; Rovniak, Anderson, Winett and Stephens, 2002; Sallis and Owen, 1999). A different study by Dowda, Ainsworth, Addy, Saunders, and Riner (2003) also showed social support correlates with participation in moderate to intense PA, for men and women alike.

On top of the previously stated obstacles, motivation plays an important role in the regular and sufficient participation to physical activities.

Motivation for participation in physical activity

In this research, we chose the theory of self-determination as a model on motivation. This theory was developed by Deci and Ryan (1985) and is organized around three types of motivation: intrinsic, extrinsic and amotivation. Intrinsic motivation is generally defined as practicing a sport for its own sake, for pleasure of participating, without an external obligation (Brière, Vallerand, Blais and Pelletier, 1995 ; Deci and Ryan, 1985). Extrinsic motivation is when an individual acts in order to gain something pleasant or to avoid something unpleasant (Deci, 1975). Amotivation to participation is characterized by an individual who does not see the relationship between his actions and his results (Pelletier and Vallerand, 1993).

METHODOLOGY

Our sample was made of 636 men and 1250 women (respectively 33.7% and 66.3% of our sample) who were on average 19.8 years old \pm 4.34. Amongst these intentional participants, a bit more than three quarters (1473 answers) came from the Cégep de Sherbrooke with the others coming from the Cégep de Trois-Rivières.

The tool used to capture our data is an online questionnaire form created from already validated tools such as “*Exercise barriers Scale*” (EBS) (Sechrist, Walker and Pender, 1987), the “*Questionnaire mondial sur la pratique d’activités physiques*” (GPAQ) (OMS, 2006) and the “*Échelle de motivation dans les sports*” (EMS) (Brière, Vallerand, Blais and Pelletier, 1995). This questionnaire was made of 98 closed and open-ended questions. The final questionnaire was validated by three experts and tested by 50 students.

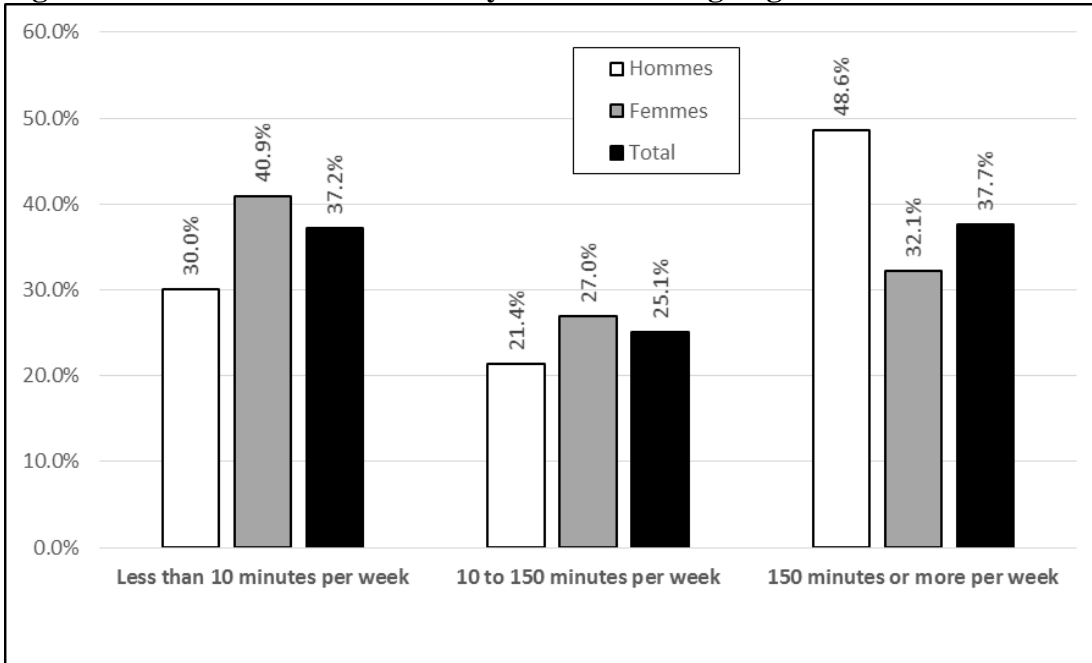
The GPAQ allowed us to get the minutes of medium or high intensity physical activity (PA) in order to estimate the energy expenditure of individuals in METS. The MET indicates the ratio between metabolism speed during PA and metabolism speed during rest (OMS, 2006).

RESULTS

PA level of Cégep students

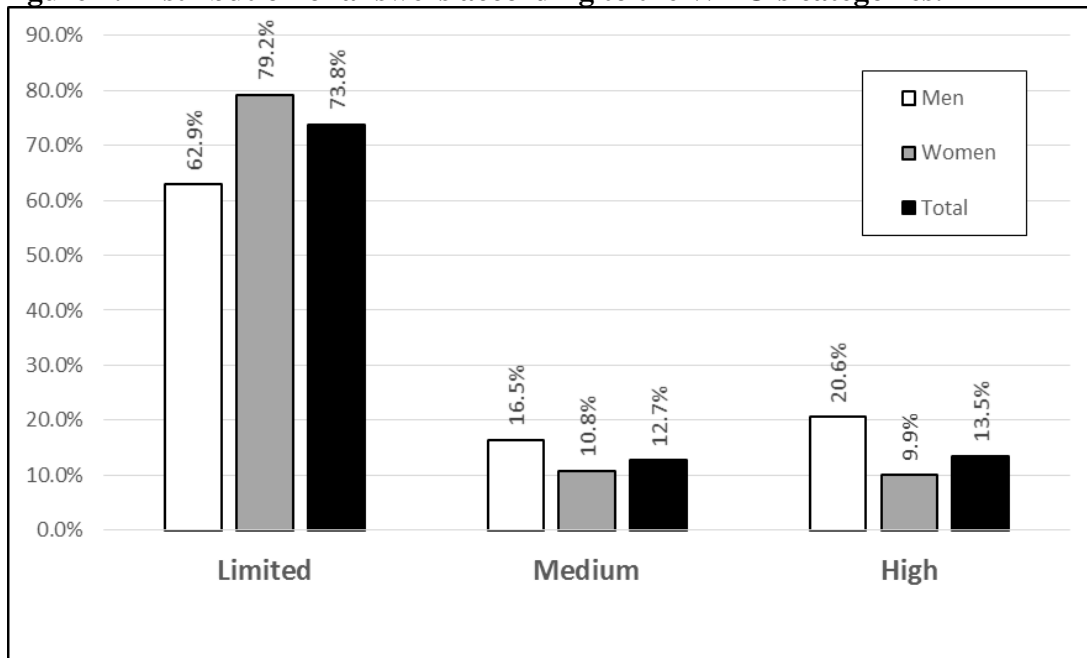
To have a physically active lifestyle, the WHO and Health Canada recommend a minimum of 150 minutes (2h30) of moderate or intense PA each week. The following figure shows the PA degree of individuals according to their gender.

Figure 1: PA minutes for students by week according to gender



This chart shows that a third of our students complete less than 10 minutes of PA a week and this observation is worse for women (40.9%). The number of PA minutes a week is a good indicator but does not take into consideration the intensity of the PA. This is why we calculated the METS expenditure as well. The categories of figure 2, taken from the WHO, correspond to the impact that participation in physical activity has on health (limited, medium or high).

Figure 2: Distribution of answers according to the WHO's categories.



According to this ranking, almost three quarters of the students (79.2% of women and 62.9% of men) have a weekly participation in physical activity that has a limited impact on their health. A bit more than one student out of ten (20.6% of men and 9.9% of women) has a weekly PA level with a high impact on their health.

We also evaluated the impact of active transportation (AT) and our results confirm that AT has a very significant impact on the weekly PA participation of Cégep students. The effects of AT are more important for men (it increases their PA participation by 35%) than for women (their PA participation increases by 27%). It is important to note that the most sedentary students are more susceptible to benefit from the additional METS granted by AT and improve their health.

- **Surprising results**

Our research shows that there is no significative average difference between body mass index (BMI) and the level of participation to PA with Cégep students. This is surprising because the majority of studies on the general population generally find a link between both these variables (Agence de la santé publique du Canada, 2010 ; Audet, 2007 ; OMS, 2009, Shields *et al*, 2010). For Cégep students, participation to PA does not seem to have an incidence on BMI. Other variables such as the diet of Cégep students would have to be analyzed to interpret this surprising result.

The lack of time, that we expected to find as an obstacle, does not make an appearance in our research, but we did not evaluate the time taken by homework. Still, this obstacle is the most prevalent one in the literature. Furthermore, having a job is not an obstacle either and it seems to favour participation to PA. These results lead us to believe that busy students better manage their schedule to make time for PA.

- **Obstacles to physical activity participation**

Smoking or dependancy on a third party to move around are obstacles to PA participation that came up often. In our study, the most significant obstacle is the lack of access to free infrastructure close to the students. This obstacle is less mentioned in the literature but our study brings a contribution to that effect. To offer more free activities and to ease the access to sports facilities would be interesting avenues to favour PA participation by Cégep students.

- **Facilitators to physical activity participation**

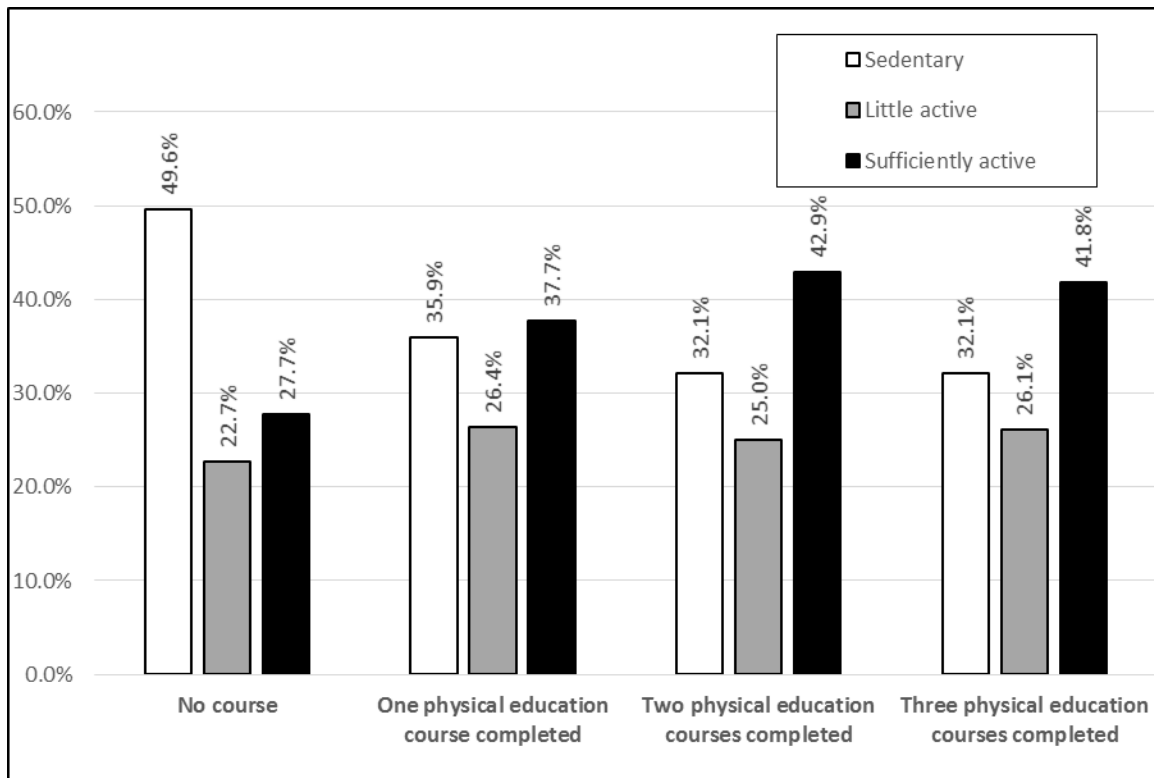
Amongst the facilitators, we find participation to PA in high school. Our results show that active high school students stay as such in Cégep. However, the PA levels are globally lower at Cégep than high school, which is consistent with the literature. High levels of intrinsic and extrinsic motivation are also conditions that favour participation to PA at Cégep. We notice that evaluations in physical education classes and the points related to them can be useful to get students to practice sports (extrinsic motivation). However, once these external indicators are no longer present, students seem to revert to their usual practices. It would be very important to act on the notion of pleasure and personal satisfaction (intrinsic motivation) found in participation to PA. We noticed a higher level of intrinsic motivation in the more active students.

Another classification of PA level proposed by the WHO is minutes per week:

- **Sedentary:** Less than 10 minutes of AP a week.
- **Little active:** from 10 to 150 minutes of AP a week.
- **Sufficiently active:** more than 150 minutes of AP a week.

The next figure clearly shows that the percentage of students who fit in the sedentary category (less than 10 minutes) of the WHO decreases as physical education courses are completed.

Figure 3: Physical activity level of students according to the number of physical education courses complete at Cégep.



The students who follow PE courses at Cégep spend more minutes per week doing PA than those who do not follow PE courses. However, once these students have completed their three courses, we see a diminution of the time spent on sports. Without the help of physical education teachers, students seem to become progressively uninterested in participating to PA. We notice however that they participate more coming out of Cégep than coming in, which is new compared to previous research on the subject.

CONCLUSION

Considering the obstacles that our research identified, we believe that PE teachers are invaluable agents if we want to continue to offer a quality physical education to all students. Their interventions seem to have an impact on students but these actions would benefit from a thorough study to better understand what would make students more

active. The Cégeps also have their role to play, by building campuses that favour active transport as well as free and always accessible indoor and outdoor infrastructure. The WHO (2009) is already advocating a similar position by recommending to “introduce transport policies that promote active and safe methods of traveling to and from schools and workplaces, such as walking or cycling.” (p.10)

We will end by coming back to the main recommendations stemming from our research to favour PA participation from Cégep students:

- Bring a maximum of high school students to the PA level recommended by the WHO (150 minutes a week) so they carry this habit over to Cégep;
- Watch the PA level of Cégep students since 62.9% of men and 79.2% of women have a PA participation too limited to have an impact on their health;
- Encourage students to use active transport (walking, cycling) for their daily trips and organize the campus to favour this type of transport;
- Advise PE teachers to concentrate their interventions on the pleasure of participating in physical activity to raise the intrinsic motivation level of students while keeping requirements high in order to develop extrinsic motivation as well;
- Continue to value the importance of compulsory PE courses at the Cégep level since they significantly contribute to making students more active outside the classroom.

Cégep physical education courses are the last time students will be encouraged to adopt a healthy and active lifestyle. This period is crucial if we want them to keep positive habits for the rest of their life. After Cégep, once young adults no longer have direct resources encouraging them to engage in PA, who will grab the baton?

Bibliography

- Agence de la santé publique du Canada (2010). *Freiner l'obésité juvénile: Cadre d'action fédéral, provincial et territorial pour la promotion du poids santé*. Ottawa: Agence de la santé publique du Canada.
- Audet, N. (2007). *L'évolution de l'excès de poids chez les adultes québécois de 1990 à 2004 : mesures directes*. Québec : Institut de la statistique du Québec.
- Bergeron, P. and Reyburn, S. (2010). *L'impact de l'environnement bâti sur l'activité physique, l'alimentation et le poids*. Québec : Institut national de santé publique du Québec.
- Boiché, J. and Sarrazin, P. (2009). Caractéristiques psychosociales des adolescents non pratiquants sportifs. *Journal de Pédiatrie et de Puériculture*, 22, 62-67.
- Bois, J. and Sarrazin, P. (2006). Les chiens font-ils des chats ? Une revue de la littérature sur le rôle des parents dans la socialisation de leur enfant pour le sport. *Science et Motricité*, 57(1), 9-54.
- Brière, N.M., Vallerand, R.J., Blais, M.R., and Pelletier, L.G. (1995). Développement et validation d'une mesure de motivation intrinsèque, extrinsèque et d'amotivation en contexte sportif : L'Échelle de Motivation dans les Sports (EMS). *International Journal of Sport Psychology*, 26, 465-489.
- Chiasson, L. (2003). *L'évolution des mesures anthropométriques, de composition corporelle et de condition physique des cégépiens, 1991-2003 : Statistiques descriptives*. Lévis: Cégep de Lévis-Lauzon.
- Chiasson, L. (2004). *Analyse des habitudes de vie des cégépiens et des cégépiennes*. Rapport de recherche PAREA. Lévis : Cégep de Lévis-Lauzon.
- Comité scientifique de Kino-Québec (2011). *L'activité physique, le sport et les jeunes – Savoir et agir*. Québec : Secrétariat au loisir et au sport, ministère de l'Éducation, du Loisir et du Sport.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum Press.
- Deci, E.L. and Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Dishman, R.K., and Sallis, J.F. (1994). *Determinants and interventions for physical activity and exercise*. Dans C. Bouchard, R.J. Shephard, et T. Stephens, *Physical Activity, Fitness, and Health: International Proceedings and Consensus Statement* (214-238). Champaign: Human Kinetics.

- Dowda, M., Ainsworth, B. E., Addy, C. L., Saunders, R. and Riner, W.(2003). Correlates of physical activity among U.S. young adults, 18 to 30 years of age, from NHANES III. *Annals of Behavioral Medicine*, 26,15–23.
- Fishburne, G. J., and Hickson, C. (2005). *Quels sont les liens entre l'éducation physique et l'activité physique?* Ottawa: Association canadienne pour la santé, l'éducation physique, le loisir et la danse.
- Grubbs, L. and Carter, J. (2002). The relationship of perceived benefits and barriers to reported exercise behaviors in college undergraduates. *Fam Community Health*, 25(2),76-84.
- Hedstrom, R and Gould, D. (2004). *Research in Youth Sports: Critical Issues Status*. Ann Arbor : Institute for the study of youth sports, Michigan State University.
- Lemoyne, J. (2012). *Éducation physique : vers l'adoption d'un mode de vie actif ? Étude sur les influences des cours d'éducation physique au collégial*. Rapport de recherche PAREA. Québec : ministère de l'Éducation, du Loisir et du Sport.
- Nahas, M. V., Goldfine, B. and Collins, M. A. (2003). Determinants of physical activity in adolescents and young adults: The basis for high school and college physical education to promote active lifestyles. *Physical Educator*, 60, 42-55.
- Organisation mondiale de la Santé (2006). *Questionnaire mondial sur la pratique d'activités physiques (GPAQ)*. Genève : OMS. Consulté le 19 novembre 2013 sur le site: http://www.who.int/chp/steps/GPAQ_Analysis_Guide_FR.pdf
- Organisation mondiale de la Santé (2009). *Recommandations mondiales sur l'activité physique pour la santé*. Genève : Éditions de l'OMS.
- Organisation mondiale de la Santé (2010). *Les avantages de l'exercice physique*. Genève: OMS. Consulté le 10 décembre 2010 sur le site : http://www.who.int/dietphysicalactivity/factsheet_benefits/fr/index.html
- Pelletier, L. G. and Vallerand, R. J. (1993). *Une perspective humaniste de la motivation: Les théories de la compétence et de l'autodétermination*. Dans R. J. Vallerand et E. Thill, Introduction à la psychologie de la motivation (233-281). Montréal: Éditions Études Vivantes.
- Rovniak LS, Anderson ES, Winett RA eandStephens RS (2002). Social-cognitive determinants of physical activity in young adults: A prospective structural equation analysis. *Annals of Behavioral Medicine*, 24(2), 149-156.
- Sallis, J-F. and Owen, N. (1999). *Physical activity and behavioral medecine*. Thousand Oaks : SAGE Publication.

- Sallis, J.F., Alcaraz, J.E., McKenzie, T.L., and Hovell, M.F. (1999). Predictors of change in children's physical activity over 20 months: Variations by gender and level of adiposity. *American Journal of Preventive Medicine*, 16, 222-229.
- Sechrist, KR, Walker, SN, and Pender, NJ. (1987). Development and psychometric evaluation of the Exercise Benefits/Barriers Scale. *Research in Nursing & Health*, 10, 357-365.
- Shields, M., Tremblay, M-S., Laviolette, M., Craig, C-L. and Connor Gorber, S. (2010). Condition physique des adultes au Canada: résultats de l'Enquête canadienne sur les mesures de la santé. *Statistique Canada*, 21 (1).
- Traoré, I. Nolin, B and Pica, L A. (2012). *Activité physique de loisir et de transport*, dans L'Enquête québécoise sur la santé des jeunes du secondaire 2010-2011. Le visage des jeunes d'aujourd'hui : leur santé physique et leurs habitudes de vie, Tome 1. Québec : Institut de la statistique du Québec.
- Tremblay, M. S., Shields, M., Laviolette, M., Craig, C. L., Janssen, I., and Gorber, S. C. (2010). *Condition physique des enfants et des jeunes au Canada: Résultats de l'Enquête canadienne sur les mesures de la santé de 2007-2009 - Rapport sur la santé*, 21(1). Ottawa: Statistique Canada.