

**The Relations Between Youth Sport Participation and the Success of Military Cadets in
RMC's Four Pillars**

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Abstract

Youth sport reaches and connects participants far and wide. Despite that one of the central aims of youth sports is to have participants develop life skills that are useful in adulthood, few studies have sought retrospective perceptions from adults. The purpose of this thesis was to examine the relations between youth sport participation and the success of cadets from the Royal Military College of Canada (RMC). More specifically, this study examines the relation between youth sports participation and cadets' success in RMC's four pillar program, life skills, and current mental health and well-being. To answer the research question, a survey was deployed among RMC cadets and gathered a total sample of 138 participants ($N = 56.5\%$ male). Primary findings include that there was a significant relationship between youth sport participation and the development of life skills. Also, the theory that youth sport has a positive impact on mental health was not supported and the gender difference in relation the mental health was not significant. Lastly, the hypothesis that youth sports would help people in the four pillars was only partially supported, meaning bilingualism and military were not predicted by youth sport participation. In summary, this article helps offer a unique perspective concerning the long-term effects of youth sports participation and shows which aspects of youth sports participation research require more exploration.

The Relations Between Youth Sport Participation and the Success of Military Cadets in RMC's Four Pillars

Sport participation is a unique activity that has the power to connect people from a wide variety of backgrounds and experiences. It is an activity that can bring people together regardless of their differences in income, social class, culture, and political opinions. Sports are commonly known to be highly impactful for reasons such as building healthier lifestyles and helping people have a more active life; sports have remarkable impacts on mental health and positive self-perception and are recommended for people who want to lead healthier lives. Sports also help people develop a more comprehensive social network (Bechtol, 2001; Coakley, 2011; Sahu, 2018; Schäfer & Rehberg, 1970; Walton et al., 2022) and can remove people from their comfort zones allowing them to meet peers with similar interests. Many studies have examined the broad scope of impact sport participation can have (Broh, 2002; Bruner et al., 2021; Eather et al., 2023; Troutman & Dufur, 2007). For example, studies have examined the influence of playing sports in high school on academics, mental health, social development, as well as building good habits. However, these are predominantly based on studies done in the high school setting (Bechtol, 2001; Schmalz et al., 2008; Troutman & Dufur, 2007; Whitley et al., 2019). Youth sport participation is an essential element in personal development, and people often disregard the magnitude of impact it can have (Bruner et al., 2021; Eime et al., 2013).

Sound child development is imperative for children to realize their full potential and develop valuable skills to help them confront challenges. Children need to develop skills beyond what their academic textbooks and lessons will teach them to develop and grow properly. Supreme Court Justice Byron White (as cited in Barron et al., 2000) described sports in high school as educational activities that cannot be duplicated in the classroom. White describes the

skills acquired as "thinking and acting quickly and efficiently under pressure and forcing students to meet their inadequacies face-to-face and do something about them as nothing else does" (Bechtol, 2001, p. 409). Development through youth sport helps children face challenges outside of the classroom and forces them to be creative and come up with solutions to overcome the challenges they face. Playing sports from a young age can also promote a healthier lifestyle and better mental health and stress management, which are skills that persist throughout the lifetime (Appelqvist-Schmidlechner et al., 2017; Ryckman et al., 1982). To better understand the long-term effects of youth sport participation on lifestyle, personal habits, fitness, and other elements, this study aims to examine the relationship between youth sport participation and the success of military cadets in RMC's four pillars (Conrad-Avarmaa, 2018). RMC provides a unique university experience. Those who become educated at RMC must pass all four pillars to obtain their diploma. These four pillars include military, academic, bilingual, and physical fitness. The RMC mission is to prepare cadets to become good and well-rounded officers once they graduate and to give them an edge when officially starting their career training (Conrad-Avarmaa, 2022).

Literature Review

The Contribution of Sport to Human Development

Studies examining the impact that sports have on personal development suggest that sport participation consistently contributes to the development of a series of skills that helps students build good working habits and gain higher overall achievements (Broh, 2002; Corrado et al., 2011). During the last 15 years, the field of sports psychology has produced a wealth of evidence that helps clarify and describe the relations between sport participation and a long list of positive developmental outcomes (Broh, 2002; Bruner et al., 2021; Eime et al., 2013; Troutman & Dufur,

2007; Whitley et al., 2019). These positive outcomes include psychosocial and mental health benefits and positive impacts on athletes' mental health and confidence levels (Bruner et al., 2021; Ryan & Deci, 2000).

Other studies have found that sports give people higher levels of motivation and desire to be successful (Broh, 2002; Muñoz-Bullón et al., 2017; Sahu, 2018). Successful experiences in sports can help develop better self-confidence which also contributes to people wanting to go further their educational pursuits and challenge themselves to get good grades in search of more experiences of success (Broh, 2002). High-level sport participation helps people build habits and personal characteristics that increase their desire to be successful in the world of sports and academics and it also gives them a winning mindset where they constantly strive to better themselves (Broh, 2002; Eime et al., 2013; Schäfer & Rehberg, 1970). Researchers agree that “athletes exceed non-athletes in aspirations even after the potential confounding factors of socioeconomic status and maternal educational encouragement are controlled” (Schäfer & Rehberg, 1970, p.182). As such, children who participate in youth sport may develop common characteristics such as becoming better team workers and having enhanced self-regulation (Ryan & Deci, 2000).

The primary goals of high school sport programs are to help students develop life skills and better teamwork to be applied later in life. Sports also contribute to developing positive self-perception, better stress management, character building, and can help people get into the habit of practicing physical activity throughout life (Bechtol, 2001; Ryan & Deci, 2000). One of the best strategies to help people live longer and healthier lives is for them to maintain physical activity throughout their lives, and this becomes even more important once they get older (Appelqvist-Schmidlechner et al., 2017; Eather et al., 2023). Participating in sports in youth

often increases the chances that that same level of sport participation will continue throughout adulthood (Appelqvist-Schmidlechner et al., 2017; Bruner et al., 2021). Numerous articles conclude that youth sport participation has a direct relationship with positive development and encourages students to develop important life skills and habits that cannot be replicated in the classroom (Broh, 2002; Coakley, 2011; Sahu, 2018; Smith et al., 2020).

Sport Participation and Academic Performance

Studies have shown that when students participate in sports, especially during the final years of high school, it has a small but consistent benefit for their grades (Broh, 2002). There appears to be a positive relationship between sport participation and students' high-school grades, in part because of the life skills that are developed by participating and investing in a high level of sport (Broh, 2002; Muñoz-Bullón et al., 2017; Troutman & Dufur, 2007). Participation in high-intensity sports in school has been shown to have a positive impact on academic achievement as athletes tend to spend more time on homework, are often more motivated than non-athletes when it comes to educational aspirations and have greater motivation for post-secondary education than non-athletes (Broh, 2002; Troutman & Dufur, 2007). This supports the assertion that sport participation can have enormous positive benefits.

Another element often mentioned is the effect household socioeconomic status can have on a child's sport and academic performance. In a post-secondary setting, students who receive grants outperform those who do not, and this is related to a lower socio-economic status which explains the fact that these people need these grants to continue their studies (Muñoz-Bullón et al., 2017). Physical activity has been found to promote cognitive function and academic performance in adolescence (Bidzan-Bluma & Lipowska, 2018; Ishihara et al., 2020; Ploughman, 2008). In a two-year longitudinal study researching the relationship between

academic performance and sport participation in adolescence, they found that participating in any kind of sporting activity was positively associated with the improvement of academic performance (Bruner et al., 2021). Sports that required more complex motor skills were found to have an even stronger positive influence on academic performance. Conversely, dropping out of sports had a negative relation with academic performance (Ishihara et al., 2020).

Gender Differences in Sport Participation and Outcomes

Sport participation has been found to have a difference in its impact between genders. Since this is still a relatively new area of study, there has not been much research done examining other, non-binary gender identities. The gender difference does not only apply to solely academic performance but also to mental health, stress, and anxiety management (Madrigal et al., 2013; Rothberger, 2014). More specifically, females who engaged in interscholastic high school sports had much higher odds of finishing college in comparison to non-athletes (Troutman & Dufur, 2007). The benefits that sports can have on a person do not, however, transfer to all other forms of extracurricular activities. Sport participation was also found to have an impact on how quickly people graduated from college. According to Troutman and Dufur, their study found that “the odds of college completion among females who played high school sport are 73% higher than the odds of college completion among females who did not engage in interscholastic sports” (2007; p.455).

Social physical anxiety (SPA) is described as the fear or anxiety associated with a person's physique being evaluated (Hart et al., 1989). In a study comparing gender differences with SPA, Rothberger (2014) found that there was a significant difference between genders, and that females reported higher SPA scores. Some of the commonly shared experiences of those reporting high SPA are a dislike of their physique, feeling the need for physique improvement,

and lower self-confidence, conversely, people with low SPA felt good about their physique and felt comfortable in social settings (Rothberger, 2014; Troutman & Dufur, 2007). As one example, Madrigal et al. (2013) found differences in mental toughness among athletes based on age, gender, achievement level, and experience with sports. They found that male athletes reported higher total scores on mental toughness and confidence than female athletes. In another study, Vealey (1988) found that male high school and college athletes tended to report more confidence, higher competitive goals, and win orientations than females; together this combination of confidence, competitiveness, and desire to win may provide males with a greater level of mental toughness than females (Madrigal et al., 2013). Moreover, female adolescent athletes have experienced some of the greatest benefits concerning mental health, academic achievements, and self-confidence thanks to their sport participation (Whitley et al., 2019). Participation in team sports may also serve as a protective mechanism for academic achievement among female athletes experiencing depressive symptoms (Muñoz-Bullón et al., 2017; Troutman & Dufur, 2007). Finally, females who participate in sports are often found to be more achievement-oriented, independent, and have more developed self-confidence (Troutman & Dufur, 2007).

Mental Health and Sport Participation

According to numerous studies investigating the relationship between sport participation and mental health, student-athletes have fewer mental health problems, eating disorders, dietary problems, and general health problems compared to non-athletes (Eime et al., 2013). Student-athletes also develop strong attributes and have a better self-perception and sense of confidence (Rothberger, 2014; Troutman & Dufur, 2007). Studies show that self-presentation can have a heavy impact on individuals' choice of exercise environment; those who do not like their

physique or have body positivity problems will avoid participating in exercise that will tend to put their bodies on display (Rothberger, 2014; Ryckman et al., 1982).

SPA is also an important aspect of mental health and sport participation, and the key themes that emerged with SPA were “dislike of physique, need for physique improvement, concern with how physique appears to others, societal and cultural pressures surrounding physique evaluation, clothing choices made to present a certain physique appearance, and surroundings impact the comfort level of displaying physique” (Rothberger, 2014, p.22).

Individuals who participate in youth sport often tend to develop characteristics that reduce their susceptibility to certain aspects of SPA, as athletes tend to have a better opinion of themselves, they have a better internal locus of control, and are found to show fewer discipline problems (Broh, 2002; Troutman & Dufur, 2007).

Recently, sport participation has seen a decline, which can easily be explained by the increase in screen time and attraction to sedentary activities among youth (Sahu, 2018; Whitley et al., 2019). The increased popularity of these sedentary habits can have a meaningful impact on the social and physical development of youth, which can lead to issues related to confidence and health, such as obesity at a young age. Increased screen time has also been found to lead to increased anxiety, depression, and increased stress (Sahu, 2018). Moreover, articles have found that physical activity can improve mental health and have a positive impact on factors such as a person's self-image, their satisfaction in life, reduced stress, a lack of social anxiety, and their psychological well-being (Bechtol, 2001; Rodriguez-Ayllon et al., 2019; Ryckman et al., 1982). One outcome that has received particular interest in sport is mental toughness.

Mental toughness is “an inner focus and commitment to rise above challenges when facing adversity” (Madrigal et al., 2013, p.1) and is also considered to be one of the most

important and beneficial psychological attributes that can largely determine a person's level of success in their respective sport. Individuals displaying mental toughness find ways to manage pressure, reach their goals, and stay focused and motivated to be ahead of the competition (Connaughton et al., 2008; Madrigal et al., 2013). In this respect, all the best and most successful athletes have been through years of mental and physical training to become at the top of their respective sports. Youth sport participation in this respect helps students develop mental toughness, however, it is more often seen in high-level secondary school sports and can take many years to properly develop (Cherry, 2005; Madrigal et al., 2013). Highly competitive and elite athletes must learn key resilience and mental toughness skills to be able to perform in high-stress environments.

Mental toughness is also a key skill that is important for military members and helps people be more successful in military training and in their careers. Smith et al., (2020) tested a group of Navy SEALs, and observed they displayed two different mindsets when faced with adversity, competition, and demanding physical and mental tasks. These two mindsets were the stress-is-enhancing mindset, which refers to believing stress can enhance performance, health, and well-being, and the stress-is-debilitating mindset who think stress has debilitating consequences on performance. In the study, Smith et al., (2020) found that those with the stress-is-enhancing mindset had better performance on their obstacle course times, would last much longer in the program, and were rated more positively by their peers and instructors (Smith et al., 2020).

Sports Invoke a Sense of Belonging

Sport participation is a very important contributor to a healthy social life (Walton et al., 2020; Walton et al., 2024). Sports are a good way for people to bond over shared interests and to

find a way to work together to achieve a common goal. Being part of a sports team provides a sense of identity, belonging, and to a certain extent, can make athletes feel like they have a second family (Bechtol, 2001; Breslin et al., 2022). Belonging, one of the three innate psychological needs (with competence and autonomy; Ryan & Deci, 2000), can be a motivator for students to get involved in sports or clubs while in school. When satisfied, these psychological needs contribute to enhanced motivation and well-being, but when thwarted lead to the opposite effects (Ryan & Deci, 2000). A meaningful number of researchers have stated that the positive effects that come from sport participation have a lot to do with the strong social ties and the strong bonds that people develop while being part of the same sport team (Bechtol, 2001; Eather et al., 2023; Schäfer & Rehberg, 1970; Troutman & Dufur, 2007; Walton et al., 2024). “Compared to various other extracurricular activities, interscholastic sport requires a more time-intensive commitment, resulting in more frequent interaction with members of the group and membership in larger, more intense social networks” (Troutman & Dufur, 2007, p.445). This, in turn, becomes its own motivator, because students encourage and inspire each other to succeed in both the academic and sport settings and therefore continue improving themselves and motivating each other to become the best version of themselves. Motivation is very important when it comes to good mental health and well-being, motivation helps people find an objective and a sense of purpose.

Sports and RMC

The Royal Military College of Canada (RMC) is a “university with a difference”. For those who enroll in the Regular Officer Training Program (ROTP), must complete a four pillar degree. The four pillars are academics, bilingualism, military, and physical fitness (Archambault, 2023). Students are expected to reach the required levels in all four pillars to graduate as

commissioned officers in the Canadian Armed Forces (CAF). Another element that makes RMC a unique university is that its core curriculum is not like most universities. Its core curriculum consists of a minimum standard for mathematics and sciences regardless of the student's chosen faculty. It also includes a basic requirement in Canadian History, language and culture, political science, psychology, leadership, and ethics (Bennett, 2024). These courses give RMC a more comprehensive course load than a typical university. As for the bilingualism pillar, students must reach a BBB which is the minimum passing standard military members must obtain to be considered bilingual. If students do not arrive at RMC already bilingual, on top of all their other classes, students must participate in language classes to get their required profile before graduation (Conrad-Avarmaa, 2018).

In addition to what is demanded of them during the school year, students must also complete basic military officer qualification (BMOQ modules 1 and 2) during the summer, in St-Jean, Quebec. Students at RMC are required to do their basic military officer qualification course the summer before they begin their schooling. There, learn everything about the CAF from ranks to traditions to first aid and CBRN. They also learn to be disciplined, adhere to difficult timings, and participate in team-building activities (Bennett, 2021). While on BMOQ, members must complete a series of ruck marches, inspections, presentations, and tests and be able to complete a mission where they must properly lead their section to their specific objective. During basic training, students must pass the force evaluation which is the standardized annual physical fitness test in the CAF (Bennett, 2021b). Students who enroll in RMC must be prepared to face a series of challenges that are unique to the school itself. No other schools have morning inspections, military beds, group physical training, and weekly parades that are all key elements of the military pillar (Bennett, 2021).

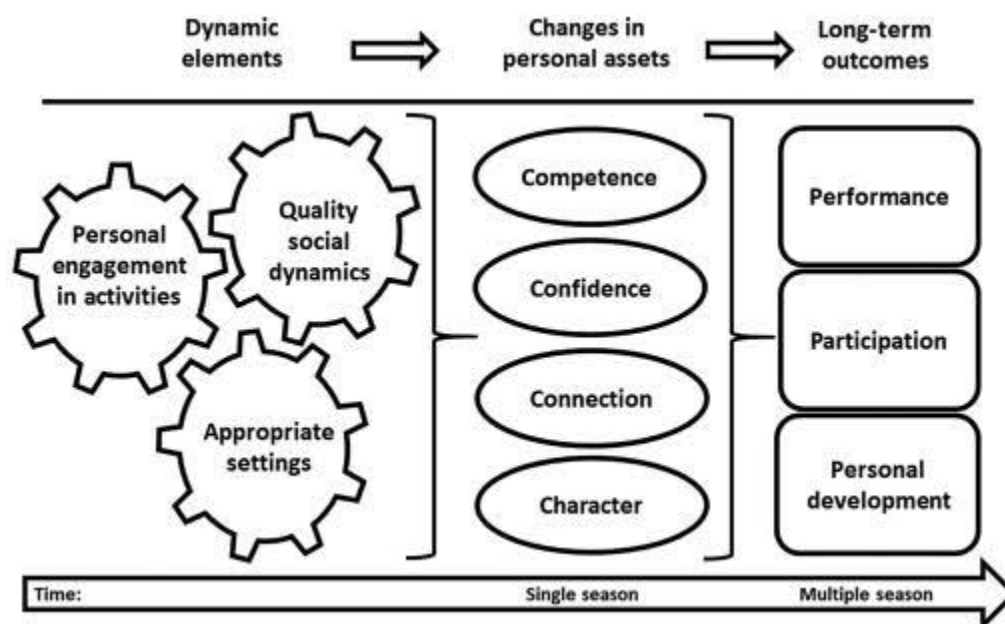
RMC is a unique university where physical fitness is mandatory and tested multiple times every year. Sport and physical activity are a very large part of the RMC lifestyle. Every student who has signed up for ROTP must participate in one athletics class every semester, which is part of the curriculum. These athletics classes entail a wide variety of physical activities such as combative training, swimming, unit physical training, rock climbing, and racket or ball sports (Bennett, 2021b). Students also take part in squadron physical training sessions which occur one morning a week, where the entire squadron participates in a physical activity together whether it be a workout or a group sport (Conrad-Avarmaa, 2021). Also, every student must participate in an extracurricular sport or club. Whether it be one of the many sport clubs offered, a varsity team that competes in the Ontario University Association (OUA), Sandhurst which trains twice a day and competes against military academies across the world, or combat weapons, which is for those who want a more military-based form of physical activity. Sandhurst is a group of individuals who participate in extensive and demanding physical training that is military and team-oriented often in the form of relays or obstacle courses with multiple physical and group-based challenges (Bennett, 2021b). Taken together, considering the many outcomes sport participation can influence, and the unique skills required to succeed at RMC, an evidence-based framework to help examine developmental outcomes among military cadets is warranted.

Personal Assets Framework

The Personal Assets Framework (PAF) suggests that “dynamic elements of sport participation (e.g., appropriate settings, quality social dynamics, and personal engagement) interact over time to foster immediate, short-term, and long-term developmental outcomes in athletes (see Figure 1)” (Côté et al., p.563, 2020). The PAF outlines a path whereby athletes develop specific short-term personal assets including confidence, competence, connection, and

character. When an athlete continues in their respective sport, these short-term personal assets eventually develop into long-term outcomes such as performance, participation, and personal development (Côté et al., 2020). The PAF also highlights that development through sport helps athletes gain key assets and positive life values that they can use throughout the rest of their lives (Côté et al., 2016).

Figure 1



The Present Study

The central aim of this paper was to examine whether youth sport participation relates to cadets' success in the four pillar program at RMC, their developed life skills, and mental health and well-being. In this way, the following three hypotheses were proposed:

H1. Cadets who participated in youth sport will report better mental health. H1A. Cadets who played competitive youth sport in high school will report better mental health than those who played community or school-based sport. H1B. Cadets who played competitive youth sport for a longer period will report better mental health. H1C. Female cadets will report worse mental health than male cadets, regardless of their time and experience in youth sport.

The above research shows that youth sport participation has been proven to influence students' grades, student-athletes tend to have higher academic prospects, and having played sports in youth leads to a lifelong habit of fitness and sport participation (Carvalho et al., 2014; Eather et al., 2023). Student-athletes also tend to spend more time studying and have better working habits. They are often also higher achievers and strive to get better grades and have more opportunities for success because they always go to chase that feeling (Broh, 2002; Schäfer & Rehberg, 1970). At RMC, students are required to be successful in the four pillar program to graduate. These four pillars have a lot of very demanding requirements such as being fit, learning a second language, passing academics, and being successful in the military aspect at the college (Archambault, 2023). Due to its alignment with previous research, it could be theorized that youth sport participation can give cadets at RMC an advantage in passing and excelling in the four pillar program compared to their non youth sport participating counterparts.

Literature on youth sport participation states there is a positive impact of youth sport on academic achievements. Students who participate in youth sport tend to report a higher GPA and were found to have more academic prospects than their non-sport participating counterparts (Broh, 2002; Muñoz-Bullón et al., 2017; Troutman & Dufur, 2007). Youth sport help students be more productive and spend less time on homework which provides them with better grades. As well, the sport environment provides support from fellow athletes and coaches. Athletes are often encouraged to have further academic pursuits by their coaching staff (Bechtol, 2001; Eather et al., 2023). As well, those who participate in youth sport are often found to continue with physical activity later in life which helps build a healthy and physical lifestyle (Eather et al., 2023; Eime et al., 2013). Sports are important across the lifespan, and people who stay active their whole lives tend to live longer and feel better (Carvalho et al., 2014; Ploughman, 2008). Physical

activity helps keep the brain young and improves cognitive function later in life. Starting sports at a young age and continuing this habit throughout life helps build healthy habits and have a healthy lifestyle.

H2A. Cadets that played competitive youth sport will report higher levels of bilingualism.

H2B. Cadets that played competitive youth sport will report better academic averages. H2C.

Cadets that played competitive youth sport will report more military involvement. H2D. Cadets

who played competitive youth sport will report better fitness scores on their most recent PPT.

The research gathered above stated that youth sport helps students learn important life skills that cannot be replicated in the classroom. They learn skills such as time management, leadership, quick decision-making, how to work in a team, and emotional skills (Bennett, 2021; Conrad-Avarmaa, 2021). Children who participate in competitive youth sport are forced to learn new skills every day to stay on top in the sport world and the classroom. Youth sport athletes also develop better mental toughness throughout their time in sports which can be directly linked to important skills required in the military lifestyle (Archambault, 2023; Conrad-Avarmaa, 2018). The military is strongly based on people being able to make timings, staying organized, having a strong work ethic, resilience, and mental toughness.

H3. My final hypothesis is that competitive youth sport athletes develop important life skills that are invaluable for cadets to ensure success at RMC. H3A. Cadets who played competitive youth sport will report better emotional skills. H3B. Cadets who played competitive youth sport will report more time management skills. H3C. Cadets that played competitive youth sport will report higher leadership skills.

Method

Participants

The survey was sent out to approximately 1200 N/OCdts from RMC, and 174 participants opened the survey link. Only one participant did not consent, and they were removed from the data. The data cleaning procedure removed a total of 29 respondents (16.8%) based on not completing any of the primary survey scales. The final sample size of this study included 144 students from RMC.

Considering my research questions and hypotheses involve comparing the effects of varying levels of youth sport, we excluded any participant that indicated they had not participated in any type of sport during their youth. As a result, the final sample size of this study consisted of 138 military students. Most respondents were aged between 20 and 22 years old (55.5% $n = 76$). There were more men (56.5%, $n = 78$) than women (41.3%, $n = 57$) and students who identified as gender non-normative (2.1%, $n = 3$). This sample is generally representative of the RMC population in terms of age, and year of study, however, the gender distribution of this sample overrepresents the female-to-male ratio of the ROTP population at RMC (23%; Arbour, 2022) as well as the proportion of women in the CAF (16.3%; Government of Canada, 2022).

Participants represented all four years of academic status with the highest amount in their first year (30.4%, $n = 42$). As for faculty representation, the highest number of participants were in arts (52.6%, $n = 70$), second was engineering (36.1%, $n = 48$), and finally science (11.3%, $n = 15$). Most grew up in an urban environment (65.0%, $n = 89$). As for the level of sports that students participated in during their youth, the highest score was in community competitive

(54.7%, $n = 75$), second was community recreation (28.5%, $n = 39$), and lastly school-based (16.8%, $n = 23$).

As for questions relating to the four pillars, starting with the fitness pillar, the most common recent PPT score reported was from 400-449 (34.3%, $n = 46$). When asked what sport level these students participated in, the highest proportion was intramurals (43.3%, $n = 58$) followed by varsity (29.9%, $n = 40$). In the military pillar, when looking at how many bar positions the participants had, the highest frequency was none (52.6%, $n = 70$) followed by one (18.0%, $n = 24$). For the academic pillar, the most common grade estimates with 20% ($n = 16$) of the sample each were 75%-79% and 80%-84%. Regarding the bilingualism pillar, the most common language profile was BBB or higher (60.3%, $n = 79$). See Table 1 for a summary of the sample's demographic characteristics.

Table 1
Sociodemographic Characteristics of Participants

Demographic Variables	Sample Population ($n = 138$)	
	n	%
Gender		
Female	57	41.3
Male	78	56.5
Non-conforming	3	2.1
Age		
17-19	55	40.1
20-22	76	55.5
23+	6	4.4
Faculty		
Arts	70	52.6
Engineering	48	36.1
Science	15	11.3
Year of Study		
1	42	30.4
2	32	23.2
3	24	17.4
4	40	29.0

Procedure

This study received approval from the Research Ethics Board at RMC (see Appendix F). Participants of this study were recruited by way of email correspondence written in both official languages that was distributed via webmail to all students, through the Cadet Wing Master Email list. The email included a message from the researchers giving a general explanation of the survey and a link to the questionnaire on SurveyMonkey (website: www.surveymonkey.ca). Items for all measures, except the demographic questionnaire, were presented in a random order. The measures themselves were also presented in random order. Finally, a debriefing page was provided to fully describe the study and to thank the participants for their participation. (see Appendix D)

Measures

Youth Sport Participation

To get a picture of youth sport participation within our pool of participants, we used branching. If participants indicated they played sports in their youth, they were asked which level of youth sport they participated in. The three options were school-based, community recreational, and community-competitive. We defined community-competitive as a sport that involves a process of selections/tryouts. From there, participants were asked how long they played their level of sport. Those who answered no to the youth sport participation question were asked if they had been interested in playing youth sport and for the reasons they believe they did not get the chance to participate in youth sport. This data was used to help define the sample and determine if it was representative of the RMC student body.

Life Skills Scale for Sports

Participants answered three subscales (Emotional, Leadership, and Time Management skills) from the modified life skills scale for sports transfer scale LSSS-TS (Cronin & Allen, 2017; Mossman et al., 2021). The Emotional Skills subscale consisted of 14 items, the Leadership subscale had 18 items and the Time Management subscale had 14 items. This scale asked participants about whether their time in youth sport had led them to develop these specific life skills. This scale was scored using a 5-point Likert scale on which participants rated how much they related (5= *very much*) or not (1 = *not at all*) to the statements. Higher scores indicated a greater level of life skills developed through sports.

Physical Self-Efficacy

Participants answered the 22-item physical self-efficacy scale (Ryckman et al., 1982). This scale asked participants to read a list of statements dealing with how confidently and how well they view themselves to be able to perform physical tasks. This scale was scored using a 6-point Likert scale on which participants rated their perceived self-efficacy from (1 = *strongly agree*) to (5 = *strongly disagree*). To analyze these results, some of the questions had to be reverse-coded (1, 3, 4, 9, 11, 14, 17, 19, 20, 21, 22). Higher scores on this scale meant participants had a higher level of physical self-efficacy.

Psychological Distress

Participants answered a 6-item psychological distress scale modified from the original K-10 scale (Kessler et al., 2010; Kessler et al., 2003). The K-6 aims to measure psychological distress with 6 questions about a person's emotional state during the past 30 days (i.e., nervous, hopeless, restless or fidgety, so depressed that nothing could cheer you up, that everything was an effort, worthless). This scale was rated using a 5-point Likert scale from (0 = *none of the time*) to (4 = *all of the time*). The scores for all six questions are summed and can yield a minimum

score of 0 and a maximum score of 24. Low scores indicate low levels of psychological distress, and high scores indicate high levels of psychological distress.

Mental Toughness

Participants answered a 10-item mental toughness questionnaire shortened from the original 54-item Mental Toughness Questions (MTQ; Clough et al., 2002; Papageorgiou et al., 2018). The MTQ-10 examines the four main components of mental toughness which are control, commitment, challenge, and confidence. This scale was scored using a 5-point Likert scale (1 = *strongly disagree*) to (5 = *strongly agree*). To compute the scale, some of the questions had to be reverse-coded (2, 3, 6, 7). Higher scores on this questionnaire indicated a greater level of mental toughness.

Four Pillar Success at RMC

To get a better understanding of where the participants stood in their four pillars, they answered a series of questions. Participants were asked if they currently hold a bar position, how many bars, and how many bar positions they have held so far in their time at RMC. Students were asked questions regarding their level of sport participation at the college and to provide their most current PPT score. As well, students were asked about their faculty and their estimated academic average. Finally, participants were asked to provide their current language profile.

Analysis

After confirming that assumptions of normality were met, univariate ANCOVAs were used to examine the association between level of youth sport and life skills (i.e., emotional, leadership, and time management), as well as the association between level of sport and mental health (i.e., psychological distress, mental toughness), and finally the association between level of sport and performance on RMC's four pillars as well as their physical ability and physical

self-perception. The control variables employed were gender, age, and environment which are the typical control variables employed in sport psychology. In the event of a significant main effect, pairwise comparisons with a Bonferroni correction were performed post-hoc using the estimated marginal means of level of sport participation, adjusted for all covariates, to determine the source of potential differences. Data was analyzed using SPSS statistical software (version 26, IBM, New York, United States).

Results

Preliminary Findings

My study found some interesting relationships between some of the main variables which will not be fully captured in the main analyses. There was a significant correlation between the year of study and bar position ($r = -.63, p < .001$) and between a person's age and emotional skills ($r = -.314, p < .001$). The next one was between gender and physical ability ($r = 0.194, p = .038$). Also, there was a correlation between physical self-efficacy and psychological distress ($r = .436, p < .001$). The most recent PPT score was related to faculty ($r = .185, p = .033$). In this analysis, arts was coded as 1, science as 2, engineering as 3. There was also a correlation between the most recent PPT score and mental toughness ($r = .292, p = .001$). As well as a correlation between the time spent playing sports and all three life skills, emotional skills ($r = .329, p < .001$), leadership skills ($r = .382, p < .001$), and time management ($r = .385, p < .001$). Finally, there was a correlation between time management skills and grade estimate ($r = .346, p = .004$). See Table 2 for all intercorrelations, descriptive statistics, and reliabilities.

Table 2*Descriptive Statistics, intercorrelations, and reliabilities (N = 138)*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Emotional Skills	3.25	1.06	(.95)										
2. Leadership Skills	3.73	0.95	.681**	(.96)									
3. Time Management	3.37	1.18	.584**	.604**	(.96)								
4. Psychological Distress	3.43	0.82	.036	.032	.172	(.86)							
5. Mental Toughness	3.43	0.60	.181	.179	.218*	.670**	(.80)						
6. Language Profile	3.02	1.31	-.054	-.010	.094	.045	.025	-					
7. Current Grade Estimate	6.10	1.82	.128	.140	.346**	.051	.046	.079	-				
8. Number of Bar Positions	1.92	1.18	-.012	.010	.163	.142	.100	.273**	.405**	-			
9. PPT Score	4.92	1.42	.085	.064	.259**	.320**	.292**	.147	.238*	.296**	-		
10. Physical Ability	4.04	0.89	.245**	.276**	.304**	.346**	.548**	-.017	-.020	.024	.576**	(.85)	
11. Physical Self Perception	3.89	0.74	.014	.028	.087	.428**	.632**	-.048	.022	.047	.323**	.581**	(.85)

Reliabilities are on the diagonal in parentheses.

Hypothesis 1: Levels of Youth Sport and Mental Health

Hypothesis one was not supported. Contrary to H1A, cadets who participated in youth sport did not report lower levels of psychological distress. The overall effect of the level of sport on participants' psychological distress was not significant $F(2, 112) = 0.14, p = .866; \eta^2 = .003$. Similarly, H1B, which examined level of sport's relations with mental toughness was not supported, $F(2, 112) = 1.35, p = 0.263; \eta^2 = .024$. Finally, an independent t-test indicated there was not a significant difference between male and female participants' self-reported psychological distress ($p = .664$) and mental toughness ($p = .439$).

Hypothesis 2: Levels of Youth Sport and the Four Pillars

H2A was not supported, cadets who played competitive youth sport did not report higher levels of bilingualism. The overall effect of the level of sport on participants' language profile was not significant $F(2, 124) = 1.16, p = 0.86; \eta^2 = 0.003$. H2B was supported, cadets that played competitive youth sport reported better academic averages, $F(2, 74) = 4.19, p = .019; \eta^2 = .102$. When looking at differences between conditions, community competitive participants

reported higher current grade estimates than community recreational ($M_{\text{difference}} = .14, p = 1.00$) and school-based ($M_{\text{difference}} = 1.62, p = .028$) participants. The difference between competitive and school-based sport was also significant ($M_{\text{difference}} = 1.48, p = .028$). H2C: Cadets that played competitive youth sport did not report more military involvement. The overall effect of the level of sport on participants' number of bar positions was not significant $F(2, 126) = 1.25, p = .29; \eta^2 = .019$. H2D was supported, cadets who played competitive youth sport reported better fitness scores on their most recent PPT, the overall effect of the level of sport on participants' PPT score was significant $F(2, 127) = 5.38, p = .006; \eta^2 = .08$. When assessing the differences between conditions, competitive sport participants reported higher PPT scores than school-based ($M_{\text{difference}} = 0.98, p = .014$) participants. Community recreational was not different from school-based sport ($M_{\text{difference}} = 0.33, p = 1.00$) and community competitive ($M_{\text{difference}} = .65, p = .066$) was not significant.

Hypothesis 3: Level of Youth Sport and Cadet Life Skills

H3A was supported, the overall effect of the level of sport on participants' emotional skills was significant $F(2, 110) = 17.93, p < .001; \eta^2 = .25$. When looking at the variations between conditions, competitive sport participants reported higher emotional skills than community recreational ($M_{\text{difference}} = 1.10, p < .001$) and school-based ($M_{\text{difference}} = 0.81, p = .001$) participants. The difference between recreational and school-based sport was not significant ($M_{\text{difference}} = 0.21, p = .76$). H3B was also supported, the overall effect of the level of sport on participants' leadership skills was significant $F(2, 107) = 24.34, p < .001; \eta^2 = .31$. When observing at the divergence between conditions, competitive sport participants reported higher leadership skills than community recreational ($M_{\text{difference}} = 1.25, p < .001$) and school-based ($M_{\text{difference}} = 0.50, p = .039$) participants. The difference between recreational and school-based

sport was also significant ($M_{\text{difference}} = 0.75, p = .004$) and school-based leadership scores were overall higher than recreational. H3C was supported, the overall effect of level of sport on participants' time management skills was significant $F(2, 108) = 9.08, p < .001; \eta^2 = .14$. When examining the pairwise comparisons, competitive sport participants reported higher time management skills than community recreational ($M_{\text{difference}} = 0.93, p < .001$) and school-based ($M_{\text{difference}} = 0.83, p = .010$) participants. The difference between recreational and school-based sport was not significant ($M_{\text{difference}} = 0.094, p = 1.00$).

Discussion

This study was based on the idea that the level of youth sport participation would have a wide range of effects on numerous aspects of cadets' lives at RMC. The central idea behind this study was that sports can build psychological and life skills, and contribute to performance in the four pillars. Some of the propositions tested in this study were that cadets who participated in a higher level of youth sport would have an advantage and overall better results on the four pillars of RMC, and that they would have better overall mental health and mental toughness than those participating in lower levels of youth sport. Several hypotheses were not supported, such as the level of youth sport participation being associated with students' mental health at RMC. As for the four pillars being impacted by youth sport participation, this hypothesis was partially supported; the fitness and academic pillar were both supported. As for the third hypothesis stating that the level of youth sport would influence cadets' life skills, all three sub-hypotheses were supported. Taken together, the findings from this thesis provide novel information regarding how involvement in youth sport is associated with four pillar success among RMC cadets.

Hypothesis 1: Youth Sport and Cadet Mental Health

In previous literature, it was found that youth sport participation had an impact on students' mental health when it came to avoiding depression and anxiety, helping people find a sense of belonging, and growing their social circle (Appelqvist-Schmidlechner et al., 2017; Bechtol, 2001; Eime et al., 2013; Madrigal et al., 2013; Ryckman et al., 1982). Sport participation has been shown to have a positive impact on people's well-being at any stage of life. It was especially seen that physical activity among youth was positively associated with psychological, cognitive, and social health indicators (Appelqvist-Schmidlechner et al., 2017; Madrigal et al., 2013; Sahu, 2018). As a result, I hypothesized that those who participated in youth sport would have better mental health than their non-participating counterparts, however, in this study, it was not the case. The findings when we analyzed the relation between the level of youth sport participation and mental health were not significant. Psychological distress and mental toughness were both not significant when using the control variables of gender, age, and environment.

There is research suggesting elite youth sport participation could have negative impacts on athletes' mental health and well-being. Because of the very high mental and physical demands that are placed on these elite athletes, competitive sport could make athletes more susceptible to mental health problems (Breslin et al., 2022; Eather et al., 2023). A meta-analytic review discovered that elite athletes, whose age ranges from 14 to 24, reported much higher levels of mental ill health than the general population within that similar age bracket (Purcell et al., 2019; Walton et al., 2022). This could be explained by the substantial overlap between when elite youth athletes compete and the prime years of onset for mental disorders during adolescence (Breslin et al., 2022; Purcell et al., 2019).

These findings could also potentially be explained by considering that there is poor mental health awareness in youth sport participation at any level of competition. Adolescence is one of the more important stages of personal development and growth, and sometimes, with high physical demands in sports, it can lead to athletes becoming more susceptible to developing certain mental, physical, and psychosocial disorders. According to our hypothesis, it was expected that those who participated in higher levels of young sport would report better overall mental health, however, with these results, it was shown that there was no significant difference in the levels of mental health in different levels of sport participation. There were also no significant results for mental health and gender. The RMC environment could also help better understand the results. Compared to other universities, RMC is a university with more demands and expectations. As well, students at RMC are told on multiple occasions about the mental health resources provided on campus, and every cadet receives a pocket-sized pamphlet with all the mental health resource phone numbers at their disposal. This could mean that when they come to RMC, their previous backgrounds of potential mental ill-health could change once they have access to more resources and develop a better understanding of mental health in general. There is also the concept of universality of service which we must consider (National Defence, 2018), which encompasses the fact that people will not get accepted into the military with significant mental health concerns. People can still need access to mental health resources without having a disorder. Also, while it was expected that females would report worse mental health than males, this could be explained by the fact that the female population at RMC is so much smaller, and so females work that much harder to find friends, therefore, the friendships they make are very profound and valuable, and these outlets and friendships could be a reason why females mental health is not lower than males despite their lower numbers.

Another important consideration is that RMC does not tend to recruit the most elite-level athletes for their varsity teams. RMC is a very small university and they do not tend to do very well in the OUA competitions, which means that most elite athletes look for opportunities to go to a school that will allow them to win over a school that will offer them more playing time. Oftentimes, RMC teams host open tryouts at the beginning of every school year and because of the small number of athletes on each team, most people get accepted to teams if they show interest, and talent is often disregarded. Coaches often have the mentality that they can train someone to become an athlete for their specific sport because they do not get a chance to recruit or not many people who play high-level sport are interested in joining the military. This indicates that athletes at RMC may have different levels of elite status and have had different sport-related experiences as a result. These results highlight that overall, there is no difference when it comes to the level of youth sport participation and RMC cadets' current mental health.

Hypothesis 2: Youth Sport and the Four Pillar Program

I hypothesized that youth sport participation would have a significant impact on cadets' success in RMC's four pillars, which was partially supported. The effects of youth sport on academic averages and fitness (i.e., PPT scores) were supported, however, the effects of youth sport on the bilingualism pillar and military pillar were not supported.

The literature helps support the theory that those who participate in youth sport would have a better academic average and would be able to continue keeping a healthy physical lifestyle. These skills relate to the four pillars of RMC, academic, physical fitness, bilingualism, and military.

In this study, it was hypothesized that having a high level of youth sport participation would help people be more successful when it came to the academic pillar. Concerning the four

pillars at RMC, it could be argued that those who have been active throughout childhood have an advantage over those who had a less active childhood. Athletes have a more well-developed physical literacy base than those who did not participate in a higher level of youth sport, which could lead to an advantage regarding RMC's athletic pillar. As for academics, previous research, and our findings support a significant association between youth sport participation and academic achievements. Even with less time on their hands, those who participated in youth sport have a better academic average than those who did not. This could potentially be linked to life skills which are estimated to be developed in youth sport, or that athletes at RMC have less time on their hands therefore they are more efficient with the time they do have. As a final consideration, physical activity is beneficial for the brain and some research has gone as far as calling physical activity "brain food" (Ploughman, 2008) because of its benefits on the body and mind.

As for the sub-hypotheses that were not supported in this study, it was hypothesized that there would be a similar impact regarding the effects of sport participation on bilingualism. The idea was that sport involvement presents opportunities to meet new people from diverse backgrounds. Even though all the athletes have their selected sport in common, they come from different backgrounds and are introduced to different cultures and languages. Since Canada is a bilingual country, this hypothesis was based on the idea that across Canada, sports bring people together no matter the language, and that being part of a team sport could help people become more bilingual because teammates could come from French families. However, one explanation for why this hypothesis was not supported could be because people who come from RMC come from all over Canada. Even though Canada is supposed to be bilingual, Western Canada is very English. With the RMC campus being in Ontario, and every cadet having to do their basic

training in St-Jean Quebec, I argued that cadets could have also learned to become more bilingual, however, this pillar was not impacted by youth sport participation. There was also a ceiling effect with the bilingualism pillar, because 60.3% of the survey respondents reported having BBB or higher, so this could be another reason as to why there was no significant difference in the level of youth sport participation and the bilingualism pillar.

The hypothesis that youth sport participation would have an impact on the military pillar was also not supported. It was theorized that youth sport introduces athletes to more direct leadership examples and potential leadership experiences throughout their time in sports, and from there, they might develop more will to take on more bar positions and go above and beyond to accomplish their military pillar. Competitive youth sport athletes are accustomed to a very demanding schedule, which is mirrored in the life of an RMC students. Because they are accustomed to this busy schedule and are forced to learn sophisticated time management, it was hypothesized that youth sport participants would take on more bar positions and have higher military aspirations than those who did not participate in youth sport. The lack of significant association could be explained by the fact that depending on the faculty cadets are in and the level of sport participation they have committed to at RMC, they would have much less time on their hands and so adding on multiple bar positions above the minimum requirement could prove to be too much. Also, there is a potential floor effect when it comes to this variable, because at RMC, first years do not get the opportunity to hold a bar position, and there are very few bar positions available for second years. The first and second years represent 53.6% of our participants which greatly affects this portion of the analysis.

RMC is a unique university because when people choose to join the regular Officer Training Program (ROTP), they are offered a free education if they complete their degree within

four years. Certain people may have enrolled in RMC because of the incentive of free education. This explains that there was potentially a wide variety of socioeconomic situations for different people going into RMC. Because the incentive was free education, this could explain why there was no relation between youth sport participation and the military pillar, because some people simply want to get by with the bare minimum military requirements, meaning only one leadership position throughout their four years, all the while continuing to play their sport and continue that active lifestyle they have developed throughout their youth. RMC athletes may be more likely to choose this route so they can have more time to manage their sports and academic commitments. The socioeconomic status might also help explain that there was a positive relation between youth sport participation and scores on the PPT at RMC. It is possible that some of the students at RMC were very fit or successful in their sport, however, they did not have the money to go to a regular university, but they wanted the same level of education. While people come from multiple backgrounds, there are countless reasons why RMC could be the right option for certain people to obtain an education while not having the economic means to support one. As well, committing to youth sports can be very time-consuming and costly. In our questionnaire, we asked those who did not get the opportunity to participate in youth sport to provide a reason why, and most of the reasons we received were monetary related which supports the idea that the socioeconomic situation can be one of the reasons behind the lack of youth sport participation and the level played.

Hypothesis 3: Youth Sport and Cadet Life Skills

Youth sports have been studied for decades, and much of the literature can agree that youth sports help athletes develop life skills (Bruner et al., 2021; Coakley, 2011; Holt et al., 2016; Sahu, 2018). Youth sports help students create convertible motor skills, improve fitness,

create a sense of well-being, and build character, self-discipline, and responsibility (Coakley, 2011). Sports help students learn life lessons and skills that go beyond the classroom setting. These skills are important for development and these skills can be very beneficial for RMC cadets when it comes to balancing the military lifestyle of RMC, keeping a healthy social life, and staying fit. The final hypothesis that was examined in this study was that youth sport participation would be associated with better-developed life skills among cadets. The skills examined in this study were emotional, leadership, and time management. This hypothesis was fully supported.

This study found that there was a significant relationship between youth sport participation and the development of life skills. The life skills selected in this study were those that could be closely linked to the RMC lifestyle and its expectations. My hypothesis that youth sport participation has a positive impact on athletes' emotional skills was supported. The level of youth sport for which this was the most supported was competitive youth sport participation. Youth sport forces students to deal with potentially stressful situations head-on and develop skills that could help them handle performance pressure and better handle stressful situations. Such skills can be directly transferred to the military environment at RMC and help people deal with the stressors and demands that can bring people outside their comfort zones.

This study also supported that youth sport participation helps students develop leadership skills. Participating in youth sport forces students to take on different roles and provides them with a wider variety of potential mentors and coaches which they can use to build their leadership style. Being exposed to a sport environment often gives people more confidence, encourages their decision-making, and provides them with more opportunities and experiences where they can develop their personalized form of leadership (Broh, 2002; Coakley, 2011).

Those who participated in youth sport had more opportunities to develop this which helps prove our results that youth sport participation helps people develop leadership skills which are very beneficial for life at RMC. Competitive youth sport participation was found to be the most beneficial when it comes to the development of leadership skills. Competitive sport environments may have led to athletes having more responsibilities and opportunities to show and develop leadership behaviors.

This study also found a significant relationship between youth sport participation and time management. Students who participate in youth sport throughout high school dedicate a lot of time and effort into their respective sports from training to driving to practices and going to tournaments on weekends, all of this demands a lot of time for student-athletes. This forces them to be good with time management and to maintain expectations and grades in school while also committing to their sport. Time management and organization are essential to stay ahead of the busy student-athlete life and keep a good balance between school and sport all the while maintaining a healthy social life. This study proves that youth sport participation is beneficial to developing good time management skills which are very important to have at RMC to stay ahead of all the requirements and demands the college places on cadets' shoulders.

Limitations and Future Research

There are some limitations to this research that must be considered. This study used a cross-sectional design meaning the data was collected from participants at one point in time and therefore limits the scope of the findings and does not allow me to make any causal links. Furthermore, since only self-reported survey data was used when asking about retrospective sport experiences, participants may not have had perfect memories of their time in sports. This study also had about a 15% response rate when counting everyone who received the email, this

means the people who responded to the survey might be different from the people who decided not to.

Where Do We Go From Here?

There are several potential avenues for future research. From these findings, future research can be conducted to confront some of the previously mentioned limitations. With the development of technology, there is a new and unique generation of children growing up who will become our future athletes and youth sport participants as well as RMC students and future officers in the CAF. In recent years, with an alarming growth of sedentary behaviors because of the increase in the use of gadgets, youth sport participation awareness has been rising to try and get kids to become more active. There is a significant correlation between poor mental health and increased screen time among children (Sahu, 2018). In these next years, while studying the new generation of children who grew up with more screens, it would be interesting to see the effects and changes it could have on physical fitness and sport culture and ultimately military success. With this being said, it is important to continue to bring awareness and support to youth sport participation no matter the level because it brings many social benefits and allows people to know the importance and benefits of youth sport participation, as well as the consequences of not participating in youth sport.

Also, Broh (2002) compared students' academic achievements through various extracurricular activities and found that sports were the only extracurricular with a positive impact on academics. Other extracurricular activities either simply had a lower influence on academic achievement or a negative impact, which was the result of those who were part of a vocational club or who participated in intramurals (Troutman & Dufur, 2007). Moreover, it has been proven that students who participate in intramural sports have been found to get lower

grades in comparison to their peers who do not participate in any type of sport (Broh, 2002). RMC could consider this point when it comes to obliging students to participate in intramural sports and the fact that it might not be as beneficial as they believe.

Finally, more research could be conducted on youth sport participation and mental health because there is a lot of contradictory research when it comes to this area of sport psychology. Some of the research states the benefits that youth sport can have when it comes to physical fitness, staying in shape, and the social benefits of sports (Bruner et al., 2021; Coakley, 2011; Sahu, 2018). Meanwhile, other research states that sports can harm mental health because of high demands on performance, increased stress, higher levels of anxiety and depression, and the development of physiological problems that athletes could develop in elite sport participation (Breslin et al., 2022; Eather et al., 2023; Purcell et al., 2019). Considering the mental toughness and psychological readiness required in military settings and the centrality of sport and physical fitness in the military, more research on the effect of sport on service members' mental health is warranted.

To conclude, the purpose of this study was to examine the relations between youth sport participation and military cadets' success in RMC's four pillars. This study was done to help understand the potential long-term benefits of youth sport participation using a post-secondary sample of military cadets from RMC. According to my results, a higher level of youth sport participation helps RMC cadets be more successful in their four pillars and provides them with life skills that facilitate their life at the college, however, it does not affect their mental health. This could help RMC consider their recruited population and potentially invest more money, time, and effort into their varsity, competitive clubs, and Sandhurst programs, which could enhance the quality of the cadets that get accepted and recruited at the college.

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Appendix A

Measures Employed

Demographic and Sports Participation Questions

1. What gender do you identify as?
 - a. Woman
 - b. Man
 - c. Transgender
 - d. Non-binary
 - e. I wish to self-identify, _____
2. Which year of study are you in?
 - a. I
 - b. II
 - c. III
 - d. IV
3. What's your enrollment program?
 - a. ROTP
 - b. UTPNCM
 - c. ILOY
 - d. other
4. How old are you?
 - a. 17-19
 - b. 20-22
 - c. 23-25
 - d. 26 or older
5. What type of environment would you say you've lived in for the majority of your youth?
 - a. Rural
 - b. Urban
6. In your youth, did you play sports?
 - a. Yes
 - b. No
7. If yes, what level of sport did you participate in?
 - a. School-based
 - b. Community recreational
 - c. Community competitive (defined as a sport that involves a process of selection/try-out)
8. If yes, how long did you play your level of sport?
 - a. 2 years or less
 - b. 3-5 years

- c. 6-8 years
 - d. More than 8 years
9. If no, were you interested in participating in sports as a child?
- a. Yes
 - b. No
10. If yes, what was the reason you did not participate?
- a. _____

RMC Related Questions

1. Do you currently hold a bar position?
 - a. Yes
 - b. No
2. If yes, how many bars?
 - a. II
 - b. III
 - c. IIII
 - d. IIIII
3. If no, how many bars was your most recent position?
 - a. II
 - b. III
 - c. IIII
 - d. IIIII
4. How many bar positions have you had in total?
 - a. One
 - b. Two
 - c. Three
 - d. Four
 - e. Five or more
5. Were you recruited for a sports team when you came to RMC?
 - a. Yes
 - b. No
6. Which level of sport do you participate in?
 - a. Varsity
 - b. Sandhurst
 - c. Combat Weapons
 - d. Competitive Club
 - e. Intramurals
7. What is your faculty of study?
 - a. Arts
 - b. Science
 - c. Engineering
8. How many hours would you say you study on average every week?
 - a. 0-5hrs
 - b. 5-10hrs
 - c. 10-15hrs
 - d. 15-20hrs
 - e. 20-25hrs
 - f. 25-30hrs

- g. 30hrs or more
9. How many hours per day of sports commitment time do you typically give at RMC? (including working out, varsity, and athletics classes)
- a. 1 hour
 - b. 2-3 hours
 - c. 3-4 hours
 - d. 4 + hours
10. How many days per week do you participate in sports (practice or competition)?
- a. 1-2 days
 - b. 3-4 days
 - c. 5-6 days
 - d. Every day of the week
11. What is your most recent PPT score?
- a. Never done one.
 - b. Lower than 250
 - c. 250-299
 - d. 300-349
 - e. 350-399
 - f. 400-449
 - g. 450-500
12. What is your academic average for your most recent year of study (university, college or high school)?
- a. 50%-54%
 - b. 55%-59%
 - c. 60%-64%
 - d. 65%-69%
 - e. 70%-74%
 - f. 75%-79%
 - g. 80%-84%
 - h. 85%-89%
 - i. 90%-94%
 - j. 95%-100%
13. For those referring to high school grades, what would you estimate your current academic performance at RMC would be?
- a. 50%-54%
 - b. 55%-59%
 - c. 60%-64%
 - d. 65%-69%
 - e. 70%-74%
 - f. 75%-79%

- g. 80%-84%
 - h. 85%-89%
 - i. 90%-94%
 - j. 95%-100%
 - k. Not applicable
14. What is your current language profile?
- a. AAA or lower
 - b. One B (or higher), still working on the other two.
 - c. Two Bs (or higher), still working on the third.
 - d. BBB or higher

Life Skill Scale for Sport

In the next set of questions, we will be asking you about whether your time involved in youth sports (i.e., high school years) has led you to develop life skills.

Please carefully read each item.

Emotional Skills

<i>My time playing youth sport has taught me to ...</i>	Not at all	A little	Some	A lot	Very much
<i>Know how to deal with my emotions</i>	1	2	3	4	5
<i>Use my emotions to stay focused</i>	1	2	3	4	5
<i>Understand that I behave differently when emotional</i>	1	2	3	4	5
<i>Notice how I feel</i>	1	2	3	4	5
<i>I use these emotional skills...</i>					
<i>In school/education</i>	1	2	3	4	5
<i>At home</i>	1	2	3	4	5
<i>Within my community</i>	1	2	3	4	5
<i>In relationships with others</i>	1	2	3	4	5
<i>Within my academic studies</i>	1	2	3	4	5
<i>When engaging with other people in my community</i>	1	2	3	4	5
<i>In other everyday situations</i>	1	2	3	4	5
<i>When interacting with friends</i>	1	2	3	4	5
<i>With my family</i>	1	2	3	4	5
<i>In other areas of my life</i>	1	2	3	4	5

Leadership

<i>My time playing youth sport has taught me to ...</i>	Not at all	A little	Some	A lot	Very much
<i>Know how to positively influence a group of individuals</i>	1	2	3	4	5
<i>Organize team/group members to work together</i>	1	2	3	4	5
<i>Know how to motivate others</i>	1	2	3	4	5
<i>Help others solve their performance problems</i>	1	2	3	4	5
<i>Consider the individual opinions of each team/group member</i>	1	2	3	4	5
<i>Be a good role model for others</i>	1	2	3	4	5
<i>Set high standards for the team/group</i>	1	2	3	4	5
<i>Recognize other people's achievements</i>	1	2	3	4	5

<i>I use these leadership skills...</i>					
<i>In school/education</i>	1	2	3	4	5
<i>At home</i>	1	2	3	4	5
<i>Within my community</i>	1	2	3	4	5
<i>In relationships with others</i>	1	2	3	4	5
<i>Within my academic studies</i>	1	2	3	4	5
<i>When engaging with other people in my community</i>	1	2	3	4	5
<i>In other everyday situations</i>	1	2	3	4	5
<i>When interacting with friends</i>	1	2	3	4	5
<i>With my family</i>	1	2	3	4	5
<i>In other areas of my life</i>	1	2	3	4	5

Time management

<i>My time playing youth sport has taught me to ...</i>	Not at all	A little	Some	A lot	Very much
<i>Manage my time well</i>	1	2	3	4	5
<i>Assess how much time I spend on various activities</i>	1	2	3	4	5
<i>Control how I use my time</i>	1	2	3	4	5
<i>Set goals so that I use my time effectively</i>	1	2	3	4	5
<i>I use these time management skills...</i>					
<i>In school/education</i>	1	2	3	4	5
<i>At home</i>	1	2	3	4	5
<i>Within my community</i>	1	2	3	4	5
<i>In relationships with others</i>	1	2	3	4	5
<i>Within my academic studies</i>	1	2	3	4	5
<i>When engaging with other people in my community</i>	1	2	3	4	5
<i>In other everyday situations</i>	1	2	3	4	5
<i>When interacting with friends</i>	1	2	3	4	5
<i>With my family</i>	1	2	3	4	5
<i>In other areas of my life</i>	1	2	3	4	5

Physical Self-Efficacy Scale

On a scale from 1 (strongly agree) to 6 (strongly disagree), please indicate how much you agree or disagree with each of the following statements.

1. I have excellent reflexes.
2. I am not agile and graceful.
3. I am rarely embarrassed by my voice.
4. My physique is rather strong.
5. Sometimes I don't hold up well under stress.
6. I can't run fast.
7. I have physical defects that sometimes bother me.
8. I don't feel in control when I take tests involving physical dexterity.
9. I am never intimidated by the thought of a sexual encounter.
10. People think negative things about me because of my posture.
11. I am not hesitant about disagreeing with people bigger than me.
12. I have poor muscle tone.
13. I take little pride in my ability in sports.
14. Athletic people usually do not receive more attention than me.
15. I am sometimes envious of those better looking than myself.
16. Sometimes my laugh embarrasses me.
17. I am not concerned with the impression my physique makes on others.
18. Sometimes I feel uncomfortable shaking hands because my hands are clammy.
19. My speed has helped me out of some tight spots.
20. I find that I am not accident-prone.
21. I have a strong grip.
22. Because of my agility, I have been able to do things which many others could not do.

K6 Symptoms of Psychological Distress

The Kessler Psychological Distress Scale (K6) is a simple measure of psychological distress that involves 6 questions about a person's emotional state. Each question is scored from 0 (None of the time) to 4 (All of the time). Scores of the 6 questions are then summed, yielding a minimum score of 0 and a maximum score of 24. Low scores indicate low levels of psychological distress, and high scores indicate high levels of psychological distress.

1. How often during the past 30 days did you feel nervous?
2. During the past 30 days, how often did you feel hopeless?
3. During the past 30 days, how often did you feel restless or fidgety?
4. How often did you feel so depressed that nothing could cheer you up?
5. During the past 30 days, how often did you feel that everything was an effort?
6. During the past 30 days, how often did you feel worthless?

Mental Toughness Questionnaire (MTQ-10)

On a scale from 1 (strongly disagree) to 5 (strongly agree), please indicate how much you agree or disagree with each of the following statements.

1. Even when under considerable pressure, I usually remain calm.
2. I tend to worry about things well before they actually happen.
3. I usually find it hard to summon enthusiasm for the tasks I have to do.
4. I generally cope well with any problems that occur.
5. I generally feel that I am a worthwhile person.
6. "I just don't know where to begin" is a feeling I usually have when presented with several things to do at once.
7. When I make mistakes, I usually let it worry me for days after.
8. I generally feel in control.
9. I am generally able to react quickly when something unexpected happens.
10. I generally look on the bright side of life.

Appendix B

Recruitment Email

English

Good day,

You are invited to participate in a quick online research study. This is entirely voluntary and should not take more than 15 minutes to complete.

As a participant, you will be asked to respond to a series of questions about yourself and your experiences with the four pillars at RMC.

The survey is available in either English and the data collected is completely anonymous. The researchers will not know who participated.

The research is being conducted by myself, OCdt Titley for my undergraduate thesis project under the supervision of Drs Jordan Sutcliffe, PhD (Jordan.sutcliffe@rmc.ca) and Cindy Suurd-Ralph, PhD (cindy.suurd-ralph@rmc.ca). Should you have any questions or concerns about the ethical nature of this study, please contact our Research Ethics Board Chair for undergraduate studies – Dr Lagacé-Roy (Daniel.Lagace-Roy@rmc.ca).

You may participate in the study to any extent. If you do not feel comfortable answering certain questions you are free to withdraw your participation entirely. Withdrawing or not participating in the study will have no consequences to you. If you choose to withdraw, your data will not be used in the analysis.

If you are interested in taking part in this study, click on the link below. The link will take you directly to the survey. Please note that data collection will be closed on 2023-12-20.

<https://www.surveymonkey.com/r/Q68892Z>

Please do not hesitate to reply directly to this email with any questions or concerns you may have.

Thank you in advance for your participation.

OCdt Titley

French

Bonjour,

Nous vous invitons à participer à une brève étude de recherche en ligne, qui est entièrement volontaire et ne devrait pas prendre plus de 15 minutes.

En tant que participant, vous devrez répondre à une série de questions à votre sujet. Le but de cette recherche est de comprendre la relation entre certaines mesures comportementales et psychologiques.

Le sondage est mené seulement en anglais et les données recueillies sont complètement anonymes. Les chercheurs ne sauront pas qui y a participé.

La recherche est menée par moi-même, Élof Titley pour mon projet de thèse de premier cycle sous la supervision de Jordan Sutcliffe, PhD (Jordan.sutcliffe@rmc.ca), et Cindy Suurd Ralph, PhD (cindy.suurd-ralph@rmc.ca) du Département de psychologie et de leadership militaire. Si vous avez des questions ou des préoccupations au sujet de nature éthique de cette étude, veuillez communiquer avec Dr Lagacé-Roy, PhD (Daniel.Lagace-Roy@rmc.ca), président du Comité d'éthique pour les études du premier cycle.

Vous pouvez participer à l'étude dans n'importe quelle mesure. Si vous ne vous sentez pas à l'aise de répondre à certaines questions, vous êtes libre de retirer votre participation.

Retirer ou ne pas participer à l'étude n'aura aucune conséquence pour vous. Si vous choisissez de vous retirer, vos données ne seront pas utilisées dans l'analyse.

Si vous souhaitez participer à cette étude, cliquez sur le lien ci-dessous. Le lien vous mènera directement au sondage. Veuillez noter que la collecte des données sera fermée le 20 décembre 2023. <https://www.surveymonkey.com/r/Q68892Z>

N'hésitez pas à répondre directement à ce courriel si vous avez des questions ou des préoccupations.

Merci d'avance de votre participation.

Élof Titley

Appendix C

Consent Form

English Only

The purpose of this study is to examine attitudes and behaviours in the Naval and Officer Cadets (N/OCdt) wing of RMC.

You will be asked to respond to a series of questions about yourself and your experiences with the four pillars at RMC. This survey is only offered in English. The study will take approximately 20 minutes of your time. You will not be compensated for participating.

The research is being conducted by myself, OCdt Titley for my undergraduate thesis project under the supervision of Drs Jordan Sutcliffe and Cindy Suurd-Ralph of the Department of Military Psychology and Leadership. You are free to participate to the extent that you feel comfortable (you may complete all or some of the questions). You may withdraw from participation at any time by exiting the survey. Should you withdraw, your data may not be used in the analyses.

Strict guidelines will be followed to protect your privacy. The study is completely anonymous, and the researchers will not be able to identify who has completed the study. All data is stored using SSL encryption. Only group data will be reported. All raw data will be destroyed within seven years from when the study is published. Only the researchers mentioned in this letter of information, along with the thesis supervisors, will have access to the data.

There are no known risks involved in participating in this research. We hope this research will benefit the field of psychology, the Royal Military College and the Canadian Armed Forces. This research project has received ethical approval by the Royal Military College Research Ethics Board (REB 2023002). If you have concerns about the ethical nature of this study or about your rights as a participant, please contact the Chair of the undergraduate studies Research Ethics Board, Dr Lagacé-Roy (daniel.lagace-roy@rmc.ca).

Questions regarding this study should be addressed to OCdt Titley (s29747@rmc-cmr.ca), Dr Jordan Sutcliffe (Jordan.sutcliffe@rmc.ca), or Dr Cindy Suurd Ralph (cindy.suurd-ralph@rmc.ca).

Pressing the “Yes” button (below) will be interpreted as providing consent for participation in this research. It will also be interpreted as indicating that you: understand the procedures, realize that you are not required to participate if you so choose, are free to withdraw from the study at any point in time, and freely consent to participate in this research.

Thank you for your time and consideration.

Do you consent to participate in this study?

Appendix D

Debriefing Form

English

Initially, we told you that the purpose of this study was to better understand students' level of success in all four pillars at RMC. We only gave you a vague description of the study beforehand because we did not want to influence your responses in any way. Specifically, we are interested in examining the relation between youth sport participation and the success of cadets at RMC.

This study was a way to get specific numbers and data on cadets directly after having received the latest ppt scores. All participants have gotten the same questionnaire.

We do not have the ability to provide a copy of your results since this questionnaire was anonymous. However, if you are interested in obtaining a copy of the overall results of this study, you may contact the primary researcher, OCdt Emma Titley, s29747@rmc-cmr.ca.

As stated earlier, your responses to the questionnaires completed are not identified.

If you have any questions or concerns about this research, please contact OCdt Emma Titley at S29747@rmc-cmr.ca. If you have any ethical concerns about this study you may contact the Chair of the Royal Military College Research Ethics Board, Dr. Nicole Bérubé (nberube@mail.com).

Thank you for your participation!

Appendix E

Mental Health Resources

English

RMC RESOURCES

RMC Duty Staff

RMC Duty Officer: 613-483-3024, 613-453-5007 or 613-541-6000 x 6547
Padre on duty: 613-541-6000 x 6284 or 6204 or 613-541-5330 (specify if at RMC)

Padres at RMC :

Senior Padre (Roman Catholic): Maj Maria-Cristina Codina

Tel: 613-541-5010 x 4094

Cell: 613-329-3368

Email: Maria-Cristina.Codina@forces.gc.ca

Campus Security Control Centre (CCS) (24/7)

Tel: 613-541-6000 x 666

On Call Station: 613-541-6000 x 6209

33 Health Services Centre – detachment RMC

(Monday to Friday, 7:30 am to 4:00 pm)

Tel: 613-541-5010, p. 6310 prior to arrival

Ambulance (24/7): 613-544-5555

Emergency (24/7): 911

Kingston Police non-emergency line (24/7): 613-549-4660

Military Police (24/7): 613-541-5648

Canadian Forces Sexual Misconduct Response Centre (24/7):

Tel: 1-844-750-1648

Email: DND.SMRC-CIIS.MDN@forces.gc.ca

CFB Kingston Mental Health Services

Tel: 613-541-5010 x 5776

Respect in the CAF Mobile Application (for IOS and Android Users)

DND/CF Ombudsman (Direct source of information; referral and outreach)

Tel: 1-888-828-3626

Email: ombudsman-communications@forces.gc.ca

Member Assistance Program (MAP) -(24/7)
(Confidential short-term professional counselling service)
Tel: 1-800-268-7708

Conflict and Complaint Management Services
1-833-328-3351 (National)
Kingston Office
Tel: 613-541-6000 x 5641
++CCMS Kingston@CFB Kingston@Kingston

Appendix F

Research Ethics Board Letter of Approval



ROYAL MILITARY COLLEGE OF CANADA • COLLÈGE MILITAIRE ROYAL DU CANADA

PO Box 17000, Station Forces • CP 17000, Succursale Forces • Kingston, Ontario • K7K 7B4

RESEARCH ETHICS APPROVAL LETTER

File number: Titley 2023002

Project title: Examining the relations between youth sports participation and military cadets' success on RMC's four pillars

Principal Investigator: OCdt Titley

Co Investigator and supervisor: Dr. Cindy Suurd-Ralph and Dr. Jordan Sutcliff

Date of submission: 26 September 2023

Anticipated commencement date: 1 November 2023

Anticipated completion date: 20 Décembre 2023

Date of approval: 7 November 2024

Period of approval: 12 months

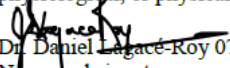
Dear OCdt Titley

This is to inform you that the RMC Research Ethics Board (REB) has granted approval to the above-mentioned project and it can now proceed. The approval is based only on the documents submitted and only in the language (s) presented. This approval is valid for twelve (12) months. If the project goes beyond this date, you must inform the REB and obtain approval for an extension.

Any intentional changes to the protocol, prior to the start of data collection must be submitted to and approved by the Chair of the REB.

Researchers should not proceed with a project if unforeseen changes to the protocol threaten participants' right to informed consent or place participants at a higher risk level than anticipated. Such unforeseen changes to the protocol during the conduct of the research must be communicated to the REB within four (4) working days, as well as the actions taken to protect the dignity of participants.

Any undesirable experience or response (adverse event) from participants during their involvement in the study must also be reported to the REB Chair within four (4) working days, as well as actions taken by the research team to protect the participants. Such adverse event may be emotional, psychological, physiological, or physical in nature.


Dr. Daniel Lagace-Roy 07-11-2023
Name and signature