



A Guide to Outcomes Evaluation for the Steel Town Athletic Club's Athletic Development Program

Prepared for
Steel Town Athletic Club

In
September 2021

By
Zenia Sultan
Abdullah Ali
Hazel Dhaliwal
Kiara Pannozzo
Stephanie Clayton

Contents

Definitions	3
Executive Summary	4
1.0. Introduction.....	5
2.0. Methodology	6
3.0. Limitations.....	7
3.1. Lack of research on youth athletes.....	7
3.2. Lack of research on racialized athletes	7
3.3. Lack of research on the relationship between physical fitness and athletic development.....	8
4.0. Literature Review	8
4.1. Athletic Development.....	8
4.1.1. Overview	8
4.1.2. Indicators and Research-Based Tools	9
4.1.3. Recommendations	11
4.2. Psychosocial Development.....	12
4.2.1. Overview	12
4.2.2. Indicators and Research-Based Tools	12
4.2.3. Recommendations	17
4.3. Sport Confidence.....	19
4.3.1. Overview	19
4.3.2. Indicators and Research-Based Tools	19
4.3.3. Recommendations	23
4.4. Intention to Pursue Post-Secondary Education	23
4.3.1. Overview	23
4.3.2. Indicators and Research-Based Tools	24
4.3.3. Recommendations	26
5.0. Conclusion	26
References	28
Appendix A: Racism and Other Lived Experiences in an Athletic Community Scale (ROLEAC).....	35
Appendix B: Questionnaire on Intention to Pursue Post-Secondary Education for Athletes (QIPPSE-A).....	41

Definitions

Athletic Development: Athletic development refers to the development of physical qualities that contribute to improved athletic performance. It involves the balanced development of all components of physical performance (Bergeron et al., 2015).

Bicycle Ergometer: Bicycle ergometers measure the work and energy of an individual during use (Science Direct, 2021).

Dispositional Sport-Confidence: The degree of certainty an individual usually has about their ability to succeed in sport.

Hand Dynamometer: A handheld device for measuring grip force (Wood, 2008).

Sport-Confidence: “The belief or degree of certainty individuals possess about their ability to be successful in sport” (Vealey, 1986).

High Reliability: The metric has demonstrated consistency in measurement (Price et al., 2015).

Internal Consistency: The metric has demonstrated consistency in participant responses throughout the questions. For example, questions that measure a similar construct (i.e., self-worth) would be responded to in the same way. (Price et al., 2015).

High Validity or Predictive Validity: The metric has measured the indicator (i.e., self-esteem) that it intends to measure (Price et al., 2015).

Executive Summary

Steel Town Athletic Club (STAC) is an organization that focuses on providing inclusive and diverse athletic programming for Hamiltonians. In partnership with the Kiwanis Boys & Girls Clubs, STAC is piloting the Athletic Development program, which provides high-level athletic development training and psycho-social development for high-school aged racialized youth. In order to communicate the value of its program to prospective funders, STAC developed a preliminary list of intended outcomes for the Athletic Development Program. For this project, the McMaster Research Shop conducted a literature review in order to determine how to efficiently and effectively measure the impact of the Athletic Development Program.

The team conducted research on four pre-determined outcomes: 1) Athletic Development; 2) Psychosocial Development; 3) Sport Confidence; 4) Intention to Pursue Post-Secondary Education. For each of these outcomes, we identified indicators that can be used to evaluate progress towards these outcomes. Additionally, we identified tools that can be used to measure these indicators and guidelines on how these tools can be administered. Since many of the tools that we found were not developed for racialized student-athletes, we also created two customized tools that can be used by STAC in order to more accurately capture the experiences of this population.

For the Athletic Development outcome, we recommend that STAC administer tests based on the availability of special equipment, for example a stationary bike. Additionally, we encourage STAC to standardize the testing environment and testing protocol in order to maximize the reliability of the tests. The Psychosocial Development outcome can be measured using a number of tools. In particular, we recommend the Rosenberg Self-esteem Scale (Rosenberg, 1965), the Hope for Success Questionnaire (Zagórska & Guskowska, 2014), and the Mental Toughness Scale (Madrigal et al., 2020), in order to evaluate self-esteem, self-efficacy, and resilience, respectively. Additionally, the Racism and Other Life Experiences in the Athletic Community Scale, which is a customized tool developed by the McMaster Research Shop, can be used to evaluate the amount discrimination that racialized athletes have experienced. Finally, Sport Confidence can be measured using the Sport Confidence Inventory (Vealey & Knight, 2002), while Intention to Pursue Post-Secondary Education can be evaluated using the McMaster Research Shop Questionnaire on Intention to Pursue Post-Secondary Education for Athletes, which is a customized scale developed for this project.

There are several limitations to this study, including the lack of research on youth and racialized athletes. Additionally, the customized scales developed by the McMaster Research Shop team have not been tested for reliability and validity. Nonetheless, the results of this report are intended to support STAC as they apply for ongoing funding for the Athletic Development Program.

1.0. Introduction

Steel Town Athletic Club (STAC) is an organization that focuses on providing inclusive and diverse athletic programming for Hamiltonians. In partnership with Kiwanis Boys & Girls Clubs, STAC is piloting the Athletic Development program, which provides high-level athletic development training and psycho-social development for high-school aged racialized youth. This program aims to reduce barriers for racialized youth to compete in high-level sports, such as on a team at a post-secondary institution.

In order to sustain funding for the Athletic Development Program beyond its pilot phase, STAC would like to communicate the value of its program for prospective funders. For this purpose, STAC developed a preliminary list of intended outcomes for the Athletic Development Program that they have been using to apply for grants. However, STAC requires assistance researching indicators and measures to evaluate their intended outcomes, for which they approached the McMaster Research Shop in Summer 2021 for assistance.

For this project, the main research question is:

How can STAC efficiently (i.e., easy to use, low-cost) and effectively (i.e., valid) evaluate the impact of its one-year Athletic Development program pilot?

In addition to this research question, based on our consultation with STAC, the McMaster Research Shop team developed the following sub-research questions:

- What indicators can be used to evaluate progress towards the following outcomes:
 - Athletic development
 - Psychosocial development
 - Sport confidence
 - Intention to pursue post-secondary education
- What kind of tools can be used to measure indicators? How should these tools be administered?

The goal of this project is to provide STAC with recommendations on indicators, measures, and tools they can use to evaluate the impact of their Athletic Development Program. STAC intends to use this research to support evaluation of the Athletic Development program and secure long-term funding and support for the program beyond its pilot phase.

2.0. Methodology

The team searched scholarly databases, such as the McMaster library research databases and Google Scholar. The team prioritized literature on racialized athletes and youth, which, for the purpose of this project, was defined as someone between the ages of 15-30. However, in many cases, due to the lack of literature on the populations we identified above, we expanded our search to include literature on non-racialized athletes, youth, and the general population. While the purpose of our study was to focus on racialized youth athletes, we did not want to exclude established and well-sourced research.

To frame the research findings, the team used the following guiding questions:

- How does the research define each of the outcomes identified by STAC? What is the importance of this outcome?
- What kind of indicators can be used to evaluate these outcomes?
- What kind of tools can be used to measure indicators? How could these tools be administered by STAC?

A summary of search terms can be found in Table 1

Table 1: Search terms by outcome for the literature review.

Outcome	Search Terms
Athletic development	“Talent identification, “young athletes, “fitness testing,” “athletic development, “physical fitness battery,” and “sports performance”
Psychosocial Development	“Psychosocial development,” “positive youth development,” “sense of self,” “self-esteem,” “self-efficacy,” belongingness,” “mental health,” “resilience,” “athletes” and “youth”
Sport Confidence	“Sport confidence,” and “athletes”
Intention to Pursue Post-Secondary Education	“Post-secondary education AND racialized,” “Post-secondary education AND immigrants,” “Post-secondary education AND racialized AND athletes,” “athletic motivation AND post-secondary education,” “high school students AND intention to pursue post-secondary education,” “high school student athletes intention to pursue post-secondary education AND motivation”

The research team organized our research findings based on the outcomes. We evaluated our findings based on their relevance for STAC. For example, we found that many of the tools used to measure the indicators for a specific outcome were not developed with an athletic population in mind. After our analysis, we provided STAC with recommendations on which tools may be most appropriate for their program.

3.0. Limitations

3.1. Lack of research on youth athletes

Many of the articles and tools that we reviewed did not keep in mind the specific needs of youth athletes. Therefore, the indicators and tools presented in this report are from a limited body of literature. For the sport confidence outcome, the majority of the research was conducted on participants who were outside of the age range of 15-30 years. However, despite the lack of research on youth athletes, we did not find any indication that the tools reviewed are not appropriate for this population.

There was also a shortage of research around evaluating intentions to pursue post-secondary education among youth athletes in high school. Research on student athletes focuses on those that are already in a post-secondary institution, and this body of literature examines their reasons for continuing on their path. On the other hand, literature on high school students focuses on non-athlete populations. As a result of this limitation, additional research is required to determine the most reliable and valid tests for youth athletes.

3.2. Lack of research on racialized athletes

For all of the outcomes, we found a shortage of research on racialized athletes. This limitation presents particular challenges for the psychosocial development, sport confidence, and intention to pursue post-secondary education outcomes. For example, psychosocial development and sport confidence among racialized athletes may be greatly affected by factors such as racism. Additionally, racialized athletes face unique challenges when pursuing post-secondary education that may not be captured by tools that measure this concept in non-racialized populations. Additional research is required to further understand these concepts among racialized athletes, and to develop research-based tools that are appropriate for this population.

3.3. Lack of research on the relationship between physical fitness and athletic development

We noticed a lack of in-depth research on how physical fitness directly relates to improved athletic performance in young athletes. Much of the literature states that physical fitness is needed for athletic development as this is an intuitive observation in sports. However, we were not able to find studies that focused on this relationship in an experimental setting. Therefore, we made the assumption that improved physical fitness is directly associated with improved athletic development, as much of the literature assumes this as well.

4.0. Literature Review

In this section, we present our research for the following outcomes:

1. Athletic Development
2. Psychosocial Development
3. Sport Confidence
4. Intention to Pursue Post-Secondary Education

For each of these outcomes, we provide:

- An overview of the concept from the literature
- A summary of indicators that can be used to measure progress towards the outcome
- Research-based tools that can be to measure the indicators as well as a synopsis on how the tools can be administered
- Recommendations on how STAC can evaluate the outcome

4.1. Athletic Development

4.1.1. Overview

Athletic development refers to the development of physical qualities that contribute to improved athletic performance (Bergeron et al., 2015). As such, athletic development is often measured using tests of physical fitness. It is known that monitoring and developing physical fitness in young athletes is critical for improving long-term athletic performance and evaluating the effectiveness of training over time (Henriques-Neto et al., 2020). Physical fitness is also used as a way to identify talent in young athletes along with other sport-specific performance measures (Bergeron et al., 2015). For example, the International Olympics Committee recommends identifying adolescent talent through tests of physical fitness, in particular muscular fitness and movement

skills, and subsequently using the results of these tests to identify and improve weaknesses in physical fitness (Bergeron et al., 2015).

For young athletes specifically, it is important to receive athletic development training in adolescence because it can maximize athletic success in adulthood (Lloyd et al., 2015). Playing organized sports alone does not allow for the development of the necessary physical and functional performance that is required for elite young athletes (Bergeron et al., 2015). Young athletes require physical fitness in order to reach a high level of sports performance and athletic success (Bergeron et al., 2015). Moreover, this concept is not sport-specific, rather, physical fitness is necessary to perform at an elite level in a variety of sports, and can be used as a measure of overall athletic ability (Kent Sports Development Unit, 2016).

Therefore, athletic development is commonly assessed using a battery of fitness tests aimed at measuring physical qualities such as muscular strength, power, speed, agility and endurance (Henriques-Neto et al., 2020).

4.1.2. Indicators and Research-Based Tools

According to Henriques-Neto et al. (2020), the following indicators can be used to measure athletic development in young athletes:

- Speed
- Upper Body Muscle Fitness
- Middle Body Muscle Fitness
- Power
- Endurance
- Flexibility

Speed

Speed is a physical fitness indicator that is necessary for many sports. Speed can be measured using a variety of tools, including:

- Running sprints over 20m, 40m or 100m (Henriques-Neto et al., 2020; Kent Sports Development Unit, 2016; RBC Training Ground, 2021):
 - Athletes run 20m, 40m or 100m as fast as possible and are timed using a stopwatch.
- 6 second stationary bike sprint (RBC Training Ground, 2021):
 - Athletes pedal as fast as possible for six seconds on a stationary bike while remaining seated.
 - A bicycle ergometer measures the work and energy used during the sprint.

Upper Body Muscle Fitness

Muscular strength is an important determinant of success in many sports (Gabler et al., 2018). Upper body muscle fitness can be measured using:

- Push-up test (Henriques-Neto et al., 2020):
 - Athletes start in a plank position then lower their bodies, forming a 90 degree angle between the arm and forearm and then return to starting.
 - Athletes repeat as many push-ups as possible and an administrator records the number of push-ups they complete with proper form.
- Handgrip test (Marques et al., 2021):
 - Athletes squeeze a dynamometer for 5 seconds at maximum effort. An administrator records the measurement on the dynamometer.

Middle Body Muscle Fitness

Muscle strength is a promising way to increase athletic performance in sports (Gabler et al., 2018). Middle body muscle fitness can be measured using:

- Sit-ups (Kent Sports Development Unit, 2016; Marques et al., 2021):
 - Athletes perform as many sit-ups as possible in 2 minutes and an administrator records the number of sit-ups.

Power

Being able to generate power is needed for athletic success (Young, 2006). Power can be measured using:

- Vertical jumps (Marques et al., 2021; RBC Training Ground, 2021):
 - Athletes jump as high as possible from standing and the height is recorded.
- Single broad jumps (Marques et al., 2021; RBC Training Ground, 2021):
 - From a standstill, athletes jump as far forward as possible landing with two feet and the distance is recorded
- Standing triple jumps (Marques et al., 2021; RBC Training Ground, 2021):
 - With both feet placed parallel, athletes jump consecutively forward three times and the distance is recorded

Endurance

Endurance training is known to improve performance in young athletes (Baxter-Jones, 2003). Endurance can be measured using:

- 1 mile run (Marques et al., 2021):
 - Athletes run 1 mile as fast as possible. An administrator records the time.
- Beep test (Henriques-Neto et al., 2020; RBC Training Ground, 2021):

- Athletes perform a beep test, which requires running a distance of 20m before each 'beep,' which gets progressively faster as the test goes on. The test is over when the athlete is too exhausted to run the 20m distance before the next beep.
- Arm/leg stationary bike test (RBC Training Ground, 2021):
 - On a stationary bike with moving arms, athletes must hit a number of revolutions per minute (RPM) targets. The test is over when the athlete is too exhausted to hit the set targets.

Flexibility

Lastly, flexibility is another important complement in physical fitness and can be measured using:

- Sit and reach test (Henriques-Neto et al., 2020; Kent Sports Development Unit, 2016).
 - Athletes reach towards their toes while in a seated position with their legs out and their reach distance is recorded.

4.1.3. Recommendations to Efficiently and Effectively Evaluate Athletic Development

Our findings suggest that there are a number of easy-to-administer measures of athletic development across a range of outcomes. We recommend that STAC:

- a) Determine what indicators of athletic development they'd like to measure. These could be sport-specific or related to the goals of participants.
- b) Assess participants' current fitness levels before the start of programming using appropriate measures and corresponding to the equipment you have available. There should be at least one measure for each indicator that does not require special equipment like a stationary bike.
- c) Assess participants' fitness levels after programming using the same measures and analyzing the before and after data for changes.

In addition, we also recommend that STAC maximizes the reliability of the fitness measures by standardizing the testing environment and the testing protocol. Reliability refers to how repeatable and consistent a test is. Our findings indicate that reliability is needed in fitness testing to ensure that the results are due to a change in fitness as opposed to a change in testing conditions (Kent Sports Development Unit, 2016).

To achieve maximum reliability, STAC should take the following steps:

- Tests should be performed in similar weather conditions or indoor environments.
- Tests should be measured and performed in the same manner each time. For example, sprint time should be measured using the same stopwatch.

- To further enhance reliability, the tests should be administered by the same staff member each time.

4.2. Psychosocial Development

4.2.1. Overview

Psychosocial development refers to subjective self-regard and connection to people and institutions (Conway et al., 2015). Research suggests that psychosocial development plays an important role in an athlete's overall performance and success (Conway et al., 2015). For example, Giles et al. (2020) report that negative impacts on mental and social wellbeing, including unsupportive environments due to bullying, discrimination or conflict, can lead to underperformance in sports. Therefore, it is vital for athletes to enhance their psychosocial development in order to prevent these negative results.

4.2.2. Indicators and Research-Based Tools

Based on our research, we discerned the following indicators relevant for this outcome and context:

- Self-esteem
- Self-efficacy
- Sense of belongingness
- Racism and other lived experiences
- Mental health
- Resilience

Self-esteem

Self-esteem refers to a person's overall feelings of self-worth (Fox & Lindwall, 2014). This indicator is important because higher self-esteem is associated with higher wellbeing among elite and competitive athletes (Nemček et al., 2017). The same research found that positive feelings with regards to oneself allows athletes to reach their optimal performance. Fox & Lindwall (2014) similarly reported that among youth athletes, higher self-esteem is associated with better mental health, stronger ability to handle stress, and a greater ability to stay persistent. The findings of this study are further corroborated by Ferguson et al. (2014), who report that among young athletes, self-esteem is linked with overall wellbeing and helps athletes flourish by promoting their growth (Ferguson et al., 2014).

Self-esteem can be measured using the following tools:

- Rosenberg Self-Esteem Scale (Armstrong & Oomen-Early, 2009; Blume, 2000; Crawford et al., 2015; Houlberg et al., 2018; Nemček et al., 2017):

- The most widely and commonly used scale with 10 statements assessing both positive and negative feelings toward oneself.
- This tool uses a 4-point Likert scale.
- The test-retest reliability is very high.
- Self-Compassion Scale (SCS) (Ferguson et al., 2014):
 - 26 item scale with six subscales measuring self-judgement, self-kindness, isolation, common humanity, over-identification and mindfulness.
 - This tool uses a 5-point Likert scale.
 - Scale is reliable to use among adolescents and university students.

Self-efficacy

Self-efficacy refers to a person's set of beliefs regarding how able they are to execute specific actions (Zagórska & Guskowska, 2014). Research on non-athlete populations has shown that perceptions of capabilities have a significant impact on motivation and performance (Singer et al., 2001). Among athletes, self-efficacy has a similar effect. Singer et al. (2001) found that in the Nagano Olympic games, self-efficacy was a main factor that impacted US Olympic athlete performance.

Self-efficacy can be measured using the following tools:

- Physical Self-Efficacy Scale (Singer et al., 2001):
 - 22 statements that measure generalized self-efficacy in the domain of sports.
 - Contains two subscales: Perceived Physical Ability (PPA) subscale and Physical Self-Presentation Confidence (PSC) subscale.
 - This tool uses a 6-point Likert scale.
 - Predictive validity has been established for competitive sports.
- Coping Self-Efficacy Scale (Chiu et al., 2016):
 - Measures one's ability to execute coping strategies when encountering life challenges.
 - There are three subscales that include problem-focused coping (6 items), stop unpleasant emotions and thoughts (4 items), and get support from friends and family (3 items).
 - There are 11 options for each statement ranging from "can not do at all" to "certain can do."
 - Strong correlation with relieving stress and high reliability score.
- The Generalized Self-Efficacy Scale (Zagórska & Guskowska, 2014):
 - 10 statements that measure general beliefs on managing various difficult situations.
 - For instance, some questions measure the belief that one's actions are responsible for successful outcomes.
 - This tool uses a 4-point Likert scale.
 - The scale has a high score for reliability.
- The Hope for Success Questionnaire (Zagórska & Guskowska, 2014):
 - Hope is defined as "a positive motivational state."

- Research demonstrates that a chief personality trait of Olympic medalists is hope for success; this entails maintaining a positive state of mind and having strategic steps to accomplish goals.
- There are 12 statements that are measured using an 8-point Likert scale.
- Self-determination Scale (SDS) (Ferguson et al., 2014):
 - Self-determination measures one's ability to make decisions for themselves.
 - This 10 item assessment measures to what extent an individual acts in a self-determined way.
 - The tool has two subscales:
 - Awareness of Oneself measures one's reflection of their sense of self.
 - Perceived Choice in One's Actions measures one's reflection of their.
 - The tool's scores are strongly associated with self-actualization, life satisfaction, creativity and resistance to peer pressure.

Sense of Belongingness

Sense of belongingness is a subjective measure that indicates a person's perceptions of belonging to a group. Research shows that positive and supportive relationships lead to more growth and fulfillment (Essler, 2017). As a result, it is important for athletes to have supportive relationships with teammates, coaches and other institution staff members (Armstrong & Oomen-Early, 2009; Joseph et al., 2020). Additionally, research shows that a higher sense of belongingness is associated with higher self-esteem and lower depression levels (Armstrong & Oomen-Early, 2009). Singer et al. (2001) similarly found that an essential characteristic for overachieving sports teams is their sense of togetherness.

Sense of belongingness can be measured using the following tools:

- The Social Connectedness Scale Revised (SCS-R) (Armstrong & Oomen-Early, 2009):
 - There are 20 statements that measure one's social connectedness with a group.
 - There are six different options for each statement.
 - Scores can range from 20 to 120 where higher scores indicate a greater sense of belongingness.
 - This tool has good internal reliability.
- Social Support Self Report (SSSR) (Crawford et al., 2015):
 - Measures the participant's degree of social networks to determine the quality of social support that they receive.
 - First, the participant is asked to name someone who supports them in each of the following domains: family, friends, staff and significant others.
 - Then, five questions are asked each with 3 options (i.e., "not at all", "sometimes", and "a lot") to assess the quality of each relationship.

- Scores range from 0 to 80 and higher scores mean stronger support systems.
- Has shown great internal consistency.
- Coach-Athlete Relationship Questionnaire (Vierimaa et al., 2012):
 - 11 statements measuring the connection level between a coach and an athlete.
 - Must be administered to both the coach and athlete.
 - Survey vocabulary is changed depending on who is being evaluated.
 - This tool uses a 7-point Likert scale.

Racial and Ethnic Identity and Experiences of Racism

When assessing racialized athletes' psychosocial development, it is important to keep context and lived experiences in mind. Racialized athletes develop their sense of self through their race, competence and feelings of belongingness to a team (Todd & Kent, 2003). Literature has established racism negatively impacting an athlete's psychosocial development (Essler, 2017; Joseph et al., 2020). Unfortunately, we were not able to find any tools that measured this concept in racialized athletes. The tools below demonstrate this concept in general racialized populations.

Racial and Ethnic Identity and Experiences of Racism can be measured using the following tools:

- Multigroup Ethnic Identity Measure - Revised (MEIM-R) (Blume, 2020; Caqueo-Urizar et al, 2021):
 - There are 6 items that measure one's affirmation to belong to a specific ethnic group.
 - This tool uses a 5-point Likert Scale.
 - The validity of the scale is established.
- Revised 28 - Item Racial and Ethnic Microaggressions Scale (R28REMS) (Blume, 2000).
 - There are 28 items that measure the amount of microaggression that one experiences.
 - There are six options ranging from "I did not experience this event" to "I have experienced this event five or more times."
 - The higher the score, the greater the quantity of microaggression experiences.
 - The reliability of the scale is established.
- Scale of Ethnocultural Empathy (Blume, 2000):
 - There are 31 items measuring four different components including empathetic feeling and expression, empathetic perspective taking, acceptance and cultural differences and empathetic awareness.
 - This tool uses a 6-point Likert scale.
 - The reliability of the scale is established.
- Critical Consciousness Scale (Blume, 2000):
 - There are 22 items measuring one's awareness of their social conditions,

their want to promote equality and their perceptions on inequities.

- Perceived Discrimination Scale (Williams et al., 1997):
 - This tool uses two different scales:
 - The Lifetime Discrimination Scale has 11 items that measure how unfairly participants have been treated throughout the course of their life.
 - The Daily Discrimination Scale has 9 items that measure how unfairly participants have been treated from a day to day basis.

Mental Health

Mental health refers to a person's psychological and emotional state (Ballesteros & Tran, 2020). At McMaster University, Black athletes reported that the racist culture of their athletic environments affected their mental health (Joseph et al., 2020). In another research study, researchers reported that 78% of racialized athletes expressed a need for mental health support, however only 11% used supportive services (Ballesteros & Tran, 2020). A strong body of research has established that discrimination is linked with poor mental health, therefore racialized athletes are in particular need of mental health assessment and support services (Blume, 2020).

Mental health can be measured using the following tools:

- Mental Health Continuum Short Form (MHC-SF) (Anderson et al., 2018; Giles et al., 2020):
 - 14 statements are used to measure the participant's emotional, psychological and social health.
 - Derived from a longer version with 40 statements.
 - Measures the quantity of positive life experiences.
 - This tool has high internal consistency.
- Perceived Stress Scale (PSS) (Anderson et al., 2018; Chiu et al., 2016):
 - Created with 10 items that measure perceptions of stress with recent life experiences.
 - The scale has high reliability and high validity.
- Psychological General Well-Being Index (PGWBI) (Puce et al., 2017):
 - There are 22 items that are sorted into categories: anxiety, depressed mood, positive well-being, self-control, general health and vitality.
 - The items can be questions or statements and the options can be increasing or decreasing in score.
 - There can be a maximum score of 110 and higher scores indicate better psychological and general wellbeing.
 - This scale is frequently used to measure psychological general wellbeing.

Resilience

Resilience measures one's ability to handle adverse life situations (Hosseini & Besharat, 2010). Literature suggests a link between resilience and psychological health (Hosseini & Besharat, 2010). Enhanced use of coping strategies is also associated with

increased self-esteem and decreased depression (Blume, 2020). Among athletes, research states that mental toughness is associated with better resilience and overall wellbeing (Madrigal et al., 2020). Therefore, this indicator is important to measure among athletes since resilience provides them with the strength and endurance to face challenges, thereby promoting better performance (Hosseini & Besharat, 2010).

Resilience can be measured using the following tools:

- **Mental Toughness Scale (MTS)** (Madrigal et al., 2020):
 - There are 11 items that measure the level of mental toughness of the participant.
 - This tool uses a 5-point Likert scale.
 - Internal and test-retest reliability has been well-established.
 - The tool's scores have positive associations with goal orientation
- **Connor-Davidson Resilience Scale (CD-RIS)** (Connor & Davidson, 2003; Hosseini & Besharat, 2010):
 - There are 25 items that measure levels resilience
 - There are five options for each item
 - Both reliability and validity are verified
- **Brief COPE** (Blume, 2000; Szczypińska et al., 2021):
 - There are 28 statements that measure a participant's ability to cope with stress.
 - The following coping strategies are measured: acceptance, doing something else, active coping, seeking of emotional support, positive reframing, planning, venting, seeking of instrumental support, humor, self-blaming, behavioural disengagement, turning to religion, denial and substance use.
 - This tool uses a 4-point Likert scale.
 - The validity of this assessment is established.

4.2.3. Recommendations to Efficiently and Effectively Evaluate Psychosocial Development

A. Use Measures From the Literature

We recommend that STAC administer tools related to self-esteem, self-efficacy and resilience in order to efficiently measure psychosocial development. We selected these indicators based on our consultations with STAC, during which they stated that they are particularly interested in measuring self-esteem and self-efficacy for their program. Additionally, results from our research suggest that resilience is important for athletes who wish to compete at a high level (Hosseini & Besharat, 2010; Madrigal et al., 2020).

We recommend the following tools from each of the above indicators:

- Self-esteem: Rosenberg Self-esteem Scale
 - This scale is widely used in research and is often describe to as the “gold standard” when measuring self-esteem (Armstrong & Oomen-Early, 2009; Blume, 2000; Crawford et al., 2015; Houltberg et al., 2018; Madrigal et al., 2020; Nemček et al., 2017, Tracy & Erkut, 2002).
- Self-efficacy: The Hope for Success Questionnaire
 - Research demonstrates that “hope for success” is a key personality trait among Olympic champions (Zagórska & Guszowska, 2014). This trait influences an athlete’s ability to decide and act on specific activities. Additionally, hope for success determine the amount of effort an athlete puts forward into execution (Zagórska & Guszowska, 2014).
- Resilience: Mental Toughness Scale
 - Madrigal et al. (2020) state that mental toughness is “a personal capacity to deliver high performance on a regular basis despite varying degrees of situational demands.” Research suggests that mental toughness is a defining quality for professional athletes who wish to be successful at a high level (Madrigal et al., 2020).

B. Use A Customized Tool

STAC should use our newly designed scale called “Racism and Other Lived Experiences in an Athletic Community” (ROLEAC), which assesses the amount of discrimination and other racialized lived experiences that youth athletes have faced. Based on our research, we found that racialized athletes encounter unique challenges in higher level sports, including discrimination from teammates, coaches and institutions (Joseph et al., 2020). Despite the prevalence of racism in higher level sports, we were unable to find tools that measured this concept for racialized athletes. The majority of tools that measure experiences of racism were developed for non-athlete populations. For example, in the MEIM-R, one statement included “I have a strong sense of belonging to my own ethnic group.” While statements like these may address issues related to belongingness to a particular ethnicity, they fall short of capturing this issue among racialized athletes who are part of a racialized athletic community.

To address this limitation, we designed our own survey, based on existing surveys that measure racism in non-athletic settings, including the Multigroup Ethnic Identity Measure - Revised (MEIM-R) (Blume, 2020; Caqueo-Urizar et al., 2021), Revised 28 - Item Racial and Ethnic Microaggressions Scale (R28REMS) (Blume, 2000), Scale of Ethnocultural Empathy (Blume, 2000), Critical Consciousness Scale (Blume, 2000) and Perceived Discrimination Scale (Williams et al., 1997). Further details on how ROLEAC was developed and how it can be administered, as well as a copy of the scale, can be found in Appendix A.

To be noted with caution, this tool has not been tested for validity or reliability. Although ROLEAC's statements were used from other well established tools, the validity and reliability of this tool cannot be directly inferred. Since ROLEAC incorporates modified questions from a variety of tools, STAC may be selective in the questions and sections that they decide to utilize, in order to ensure maximum efficiency and relevancy.

4.3. Sport Confidence

4.3.1. Overview

Sport-confidence is defined as “the belief or degree of certainty that individuals possess about their ability to be successful in sport” (Vealey, 1986). In comparison to sport-confidence, self-efficacy is specific to the situation, whereas sport-confidence refers to the overall confidence that an individual has in their ability to perform well in a sport (Bozkurt et al., 2012). Since self-efficacy was not designed to be used in the context of sport, the concept of sport-confidence was developed and established through extensive research (Thomas et al., 2011; Vealey, 1986; Vealey & Knight, 2002; Vealey et al., 1998). Research indicates that sport confidence is essential in athletes, since it strongly influences an athlete's performance and success (Vealey et al., 1998). In particular, sport-confidence is important for racialized athletes, as an increase in sport-confidence and self-confidence increases the possibility of an individual participating and enjoying a sport, which can have further positive impacts on many domains of their lives (Stodolska et al., 2014). Additionally, such participation in sport contributes to an athlete's self-confidence and self-esteem (Collins et al., 2018). Additionally, sport-confidence affects an athlete's motivation and desire to continue with sports and pursue their desired performance levels (Stodolska et al., 2014).

4.3.2. Indicators and Research-Based Tools

We discerned the following indicators for sport-confidence:

- Performance and Mastery (Physical Skills and Training)
- Dispositional Optimism
- Ability and Outcomes
- Preparation and Effort
- Social Support
- Vicarious Experience
- Psychological Strategies
- Uncontrollable External Sources
- Cognitive Efficiency
- Resilience

- Sport Competence

Performance and Mastery (Physical Skills and Training)

Performance and mastery, including physical skills and training, refer to the ability of an athlete to perform well in their sport, as well as improve and achieve their personal goals (Vealey et al., 1998). Furthermore, this indicator involves the athlete's belief that their physical fitness level can allow them to perform and compete successfully (Morrison, 2017).

This indicator can be measured using the following tools:

- Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998):
 - This questionnaire identifies where an athlete's sport confidence stems from.
 - This questionnaire consists of 45 statements that are measured on a 7-point Likert scale (Vealey et al., 1998).
- Sport Confidence Inventory (SCI) (Vealey & Knight, 2002):
 - This inventory directly measures an athlete's degree of sport-confidence.
 - This inventory is suitable for athletes at all levels (Machida et al., 2017).
 - Previous research has found that the reliability of this scale indicates good internal consistency (Machida et al., 2017).
 - This test examines athletes' confidence and can also evaluate their psychological readiness (Conti et al., 2019).
 - This inventory is composed of 14 parts that utilize a 7-point Likert scale.

Dispositional Optimism

Dispositional optimism refers to an athlete's belief that good outcomes will occur more often than bad outcomes in sports (Manzo et al., 2001). This concept is important since optimistic individuals are more likely to believe that they can overcome the barriers that they face (Manzo et al., 2001). As a result, those who are optimistic are more likely to believe that success is possible and seek out opportunities and methods for success (Scheier & Carver, 1985).

This indicator can be measured using the following tool:

- The Carolina Sport Confidence Inventory (CSCI) (Manzo et al., 2001):
 - This tool assesses the amount of sport-confidence that an athlete possesses (Manzo et al., 2001).
 - This inventory is composed of 13 items that are measured using a 4-point Likert scale.

- This tool shows considerable validity for application and practice (Manzo et al., 2001).

Ability and Outcomes

Ability and outcomes refer to an athlete showcasing their abilities in a social setting and beating others (Vealey et al., 1998). As a result, these athletes gain favourable social recognition compared to others, ultimately affecting their sport-confidence (Vealey et al., 1998).

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Preparation and Effort

Preparation and effort refer to the physical conditioning that athletes undergo, as well as the effort that athletes expend in order to develop their abilities in their sports (Vealey et al., 1998). This indicator is linked to sport confidence since research shows that coaches often use physical conditioning to develop confidence in athletes, as it is a highly-rated strategy (Vealey et al., 1998).

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Social Support

Social support refers to the receipt of positive feedback and encouragement from coaches, teammates, family, and friends (Vealey et al., 1998). This indicator is commonly used to improve self-efficacy and perceived competence among athletes (Harter, 1981; Weinberg et al., 1992).

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Vicarious Experience

Vicarious experience refers to when an athlete observes another individual successfully perform a particular task in a sport, this heightens the athlete's own confidence (Vealey et al., 1998). For instance, through seeing that another individual can complete a task, athletes are more confident in their own abilities.

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Psychological Strategies

Psychological strategies refer to an athlete employing mental strategies to complete specific tasks (Vealey et al., 1998). These strategies involve an athlete focusing on goals, optimizing arousal, and visualizing success in their performance during sports (Vealey et al., 1998). Psychological strategies are also a source of self-efficacy, as these strategies affect an athlete's perceived competence (Vealey et al., 1998).

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Uncontrollable External Sources

Uncontrollable external sources refer to the following factors: the environment in which athletes perform, the comfort level of this environment, luck, superstitious behaviour, etc. (Vealey et al., 1998). In addition, previous research indicates that many athletes obtain increased self-confidence if they partake in these activities (Vealey et al., 1998).

- This indicator can be measured using the Sources of Sport Confidence Questionnaire (SSCQ) (Vealey et al., 1998).

Cognitive Efficiency

Cognitive efficiency refers to the athletes being able to make critical decisions during their performance and competitions in sport (Vealey & Knight, 2002). This indicator is shown to predict coping skills, competitive anxiety, and sports performance in athletes (Vealey & Knight, 2002).

- This indicator can be measured using the Sport Confidence Inventory (SCI) (Vealey & Knight, 2002).

Resilience

Resilience refers to the athlete's belief that they can regain focus after an error occurs in their performance (Morrison, 2017). This indicator is also found in previous research to predict athletes' coping skills, competitive anxiety, and sports performance (Vealey & Knight, 2002).

- This indicator can be measured using the Sport Confidence Inventory (SCI) (Vealey & Knight, 2002).

Sport Competence

Sport competence refers to how athletes perceive their athletic abilities and skills, as well as their belief in their ability to learn new skills and develop their abilities throughout

their sport experiences (Manzo et al., 2001). Sport competence also involves how individuals perceive their successes and failures throughout their sports performances (Manzo et al., 2001).

- This indicator can be measured using the Carolina Sport Confidence Inventory (Manzo et al., 2001).

4.3.3. Recommendations to Efficiently and Effectively Evaluate Sport Confidence

We recommend that STAC administer the Sport-Confidence Inventory (SCI) in order to efficiently measure sport-confidence. Based on our research, we found that this inventory is most suited for STAC since it measures the amount of sport-confidence that an athlete possesses. On the other hand, the Sources of Sport Confidence Questionnaire is more appropriate when seeking to understand and potentially impact the source of an athlete's sport confidence. Conversely, the California Sport Confidence Inventory measures an athlete's natural and consistent feeling about their ability to perform tasks in sports (Skinner, 2013). As a result, it is more appropriate to use this tool when seeking to understand psychological factors related to sport confidence, such as anxiety and the fear of failure.

Since the SCI is a single tool consisting of 14 parts, this tool can be effectively and efficiently administered to many athletes. Our findings also indicate that this tool shows high internal consistency.

4.4. Intention to Pursue Post-Secondary Education

4.3.1. Overview

Intention to pursue post-secondary education refers to the likelihood and desire that a person expresses to continue their education after the secondary-school level (Milford, 2003). Measuring students' intention to pursue post-secondary education has been a topic of interest for researchers that are concerned with education. It allows them to estimate trajectories of student cohorts and observe factors that may affect how and why students take decisions that relate to their future education and career choices. This outcome is relevant to racialized athletes who are looking to pursue sports professionally, since post-secondary education allows them to compete in sports at a higher level.

4.3.2. Indicators and Research-Based Tools

Relevant indicators for this outcome are those that measure the intention of youth athletes to pursue post-secondary education. In particular, we found the following indicators to be relevant for this outcome:

- Extrinsic Motivation
- Intrinsic Motivation
- Athletic-Related Motivation
- Locus of Control

Extrinsic Motivation

Extrinsic motivation refers to behaviours that are influenced by outside factors, such as rewards and punishments (Meadows-Fernandez, 2018). For example, in the case of education, extrinsic motivation can include the desire to receive rewards, such as high grades, or avoid punishment, such as detention.

The indicator can be measured using the following tools:

- The Academic Motivation Scale (Vallerand et al., 1992):
 - The tool contains 28 items and it includes a portion on extrinsic motivation.
 - This tool uses a 7-point Likert scale. The points refer to the reasons that students decide to go to a post-secondary institution.
- Intention to Pursue Post-Secondary Education Questionnaire (IPPSE) (Milford, 2003):
 - This tool is used to measure high school students' intention to pursue post-secondary education.
 - IPPSE includes measures about social, personal and school characteristics, along with how much value students placed on education to assess their intention.
 - Scoring is based on a 5-point Likert scale.

Intrinsic Motivation

Intrinsic motivation refers to behaviours that are influenced by internal drive (Santos-Longhurst, 2019). For example, in the case of education, intrinsic motivation can include the desire to learn, the desire to accomplish, and the desire to experience sensations such as joy and excitement (Vallerand et al., 1992).

The indicator can be measured using the following tools:

- The Academic Motivation Scale (Vallerand et al., 1992).

- The Student Motivation Scale (Martin, 2003)
 - This tool measures factors that affect high school students' motivation, and is divided into guzzlers and boosters. Guzzlers are factors that reduce motivation, while boosters are factors that increase motivation.
 - This tool uses a 7-point Likert scale.
- Intention to Pursue Post-Secondary Education Questionnaire (IPPSE) (Milford, 2003).

Athletic-Related Motivation

Athletic-related motivation refers to the factors that impact student-athletes to perform athletically. Those factors are different from academic-related motivators, because they mainly focus on sports and specifically the “athletic dream” that athletes strive to achieve. This indicator is important to measure since it assesses the different motivators that affect student-athletes' careers and progress (Gaston, 2002).

- This indicator can be measured using the Student Athletes' Motivation toward Sports and Academics Questionnaire (SAMSAQ) (Gaston, 2002):
 - This tool was developed for university student-athletes.
 - It consists of 30 questions in total, 15 for academic motivation and 15 for athletic motivation.
 - Some examples of athletic and career related motivations include:
 - I am confident that I can be a star performer on my team this year.
 - I chose to play my sport because it is something that I am interested in as a career.
 - The most important reason why I am in school is to play my sport.

Locus of Control

Locus of control refers to the degree to which individuals think that they have control over the outcomes of their lives. It can be split into two main categories: external locus of control and internal locus of control. Individuals who mainly exhibit an external locus of control may think they are not in full and direct control of their lives. Rather, they believe that their life is controlled by outside factors. On the other hand, individuals who mainly exhibit an internal locus of control believe that they can control the outcomes of their lives through their actions and attributes (Joelson, 2017). Locus of control is important for athletes since it measures their ability to take control of their lives and achieve their goals (Milford, 2003).

- This indicator can be measured using the Intention to Pursue Post-Secondary Education Questionnaire (IPPSE) (Milford, 2003).

4.3.3. Recommendations to Efficiently and Effectively Evaluate Intention to Pursue Post-Secondary Education

We recommend that STAC use the Questionnaire on Intention to Pursue Post-Secondary Education for Athletes (QIPPSE-A). This tool assesses the intention to pursue post-secondary education for athletes in high school. Based on our research, we found that youth athletes pursue post-secondary education for different reasons than the general population. Therefore, despite the presence of tools that assess intention to pursue post-secondary education, these tools do not capture the motivations of youth athletes, since they focus entirely on academic-related questions. To address this limitation, we designed our own survey, based on existing surveys such as the Academic Motivation Scale (Vallerand et al., 1992) and the Intention to Pursue Post-Secondary Education Questionnaire (IPPSE) (Milford, 2003). Further details on how QIPPSE-A was developed, how it can be administered, as well as a copy of the scale, can be found in Appendix B.

It is important to note that this tool has not been tested for validity or reliability. Rather, we modified tools that already exist in the research in order to make the questions more relevant for STAC's intended purposes. Therefore, although QIPPSE-A's statements were created from other well established tools, the validity and reliability of this tool cannot be directly inferred. STAC may also choose to be selective in the questions and sections that they decide to utilize, in order to ensure maximum efficiency and relevancy.

5.0. Conclusion

This report presents the results of a McMaster Research Shop project for STAC. Through this project, we conducted a literature review in order to determine how to efficiently and effectively measure the impact of STAC's Athletic Development Program. For this purpose, the team conducted research on four pre-determined outcomes, as outlined by STAC in their early consultations with the research team. These outcomes include: 1) Athletic Development; 2) Psychosocial Development; 3) Sport Confidence; 4) Intention to Pursue Post-Secondary Education. For each of these outcomes, we identified indicators that can be used to evaluate progress towards these outcomes. We also identified tools that can be used to measure these indicators and guidelines on how these tools can be administered.

Although STAC aims to provide athletic and psychosocial development training for racialized student athletes, in many cases we were unable to find tools that are relevant for this population. As a result, the research team developed two additional tools that can be used to measure psychosocial development and the intention to pursue post-secondary education for racialized student athletes. In order to meet the goal of

evaluating the Athletic Development program efficiently and effectively, we recommend the use of these two customized tools, along with several other research-based tools for each of the intended outcomes.

This project has several limitations, including the lack of research on youth and racialized athletes, as well as the lack of validity and reliability for the customized scales developed by the McMaster Research Shop team. Nonetheless, the results of this report are intended to support STAC as they apply for ongoing funding for the Athletic Development Program.

References

- Anderson, R. E., Jones, S., Navarro, C. C., McKenny, M. C., Mehta, T. J., & Stevenson, H. C. (2018). Addressing the mental health needs of Black American youth and families: A case study from the EMBRace intervention. *International journal of environmental research and public health*, 15(5), 898. <https://doi.org/10.3390/ijerph15050898>
- Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem, and depression symptomatology among collegiate athletes versus nonathletes. *Journal of American College Health*, 57(5), 521–526. <https://doi.org/10.3200/JACH.57.5.521-526>
- Ballesteros, J., & Tran, A. G. T. T. (2020). Under the face mask: Racial-ethnic minority student-athletes and mental health use. *Journal of American College Health*, 68(2), 169–175. <https://doi.org/10.1080/07448481.2018.1536663>
- Baxter-Jones, A., & Maffulli, N. (2003). Endurance in young athletes: It can be trained. *British Journal of Sports Medicine*, 37(2), 96–97. <https://doi.org/10.1136/bjism.37.2.96>
- Bergeron, M. F., Mountjoy, M., Armstrong, N., Chia, M., Côté, J., Emery, C. A., Faigenbaum, A., Hall, G., Kriemler, S., Léglise, M., Malina, R. M., Pensgaard, A. M., Sanchez, A., Soligard, T., Sundgot-Borgen, J., Mechelen, W. van, Weissensteiner, J. R., & Engebretsen, L. (2015). International Olympic Committee consensus statement on youth athletic development. *British Journal of Sports Medicine*, 49(13), 843–851. <https://doi.org/10.1136/bjsports-2015-094962>
- Blume, Amanda K. "Examining the effects of aspects of resiliency and vulnerability on the relationship between experiencing microaggressions and mental health among Persons of Color" (2020). All Graduate Theses and Dissertations. 7836. <https://digitalcommons.usu.edu/etd/7836>
- Bozkurt, O., Koruç, Z., Arslan, N., & Kocaekşi, S. (2012). A comparison of football players' sport confidence and self-efficacy beliefs according to their league level in Turkey. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 6(3), 349-356. <https://dergipark.org.tr/en/download/article-file/1032779>
- Caqueo-Urizar, A., Flores, J., Mena-Chamorro, M., Urzúa, A., & Irarrázaval, M. (2021). Ethnic identity and life satisfaction in Indigenous adolescents: The mediating role of resilience. *Children and Youth Services Review*: 120. <https://doi.org/10.1080/07448481.2018.1536663a>

- Chiu Y, Lu FJ, Lin J, Nien C, Hsu Y, Liu H. 2016. Psychometric properties of the Perceived Stress Scale (PSS): measurement invariance between athlete and non-athletes and construct validity. *PeerJ* 4:e2790. <https://doi.org/10.7717/peerj.2790>
- Collins, N. M., Cromartie, F., Butler, S., Bae, J., & is an Adjunct, N. M. C. (2018). Effects of early sport participation on self-esteem and happiness. *The Sport Journal*, 20, 1-20. <https://thesportjournal.org/article/effects-of-early-sport-participation-on-self-esteem-and-happiness/>
- Conti, C., Di Fronso, S., Robazza, C., & Bertollo, M. (2019). The injury-psychological readiness to return to sport (I-PRRS) scale and the sport confidence inventory (SCI): A cross-cultural validation. *Physical Therapy in Sport*, 40, 218-224. <https://doi.org/10.1016/j.ptsp.2019.10.001>
- Conway, R. J., Heary, C., & Hogan, M. J. (2015). An Evaluation of the Measurement Properties of the Five Cs Model of Positive Youth Development. *Frontiers in Psychology*: 6. <https://doi.org/10.3389/fpsyg.2015.01941>
- Crawford, C., Burns, J., & Fernie, B. A. (2015). Psychosocial impact of involvement in the Special Olympics. *Research in Developmental Disabilities*, 45–46, 93–102. <https://doi.org/https://doi.org/10.1016/j.ridd.2015.07.009>
- Essler, Jacob D. (2017). Examining sense of self among college student athletes. Retrieved from the University of Minnesota Digital Conservancy, <https://hdl.handle.net/11299/192844>.
- Ferguson, L.J., Kowalski, K.C., Mack, D.E., & Sabiston, C.M. (2014). Exploring self-compassion and eudaimonic well-being in young women athletes. *Journal of Sports & Exercise Psychology*, 36, 203-216. <https://doi.org/10.1123/jsep.2013-0096>
- Fox, K.R., & Lindwall, M. (2014). Self-esteem and self-perceptions in sport and exercise. In A. Papaioannou & D. Hackfort (Eds.), *Routledge Companion to Sport and Exercise Psychology*. Routledge. <https://doi.org/10.4324/9781315880198>
- Gabler, M., Prieske, O., Hortobágyi, T., & Granacher, U. (2018). The effects of concurrent strength and endurance training on physical fitness and athletic performance in youth: A systematic review and meta-analysis. *Frontiers in Physiology*, 9, 1057. <https://doi.org/10.3389/fphys.2018.01057>
- Gaston, J. L. (2002). A study of student athletes' motivation toward sports and academics [Doctoral dissertation]. https://etd.ohiolink.edu/apexprod/rws_etd/send_file/send?accession=osu1214837869&disposition=inline

- Gaston-Gayles, J. L. (2004). Examining academic and athletic motivation among student athletes at a Division I University. *Journal of College Student Development*, 45(1), 75-83. <https://doi.org/10.1353/csd.2004.0005>
- Giles, S., Fletcher, D., Arnold, R., Ashfield, A., & Harrison, J. (2020). Measuring well-being in sport performers: Where are we now and how do we progress? *Sports Medicine*, 50(7), 1255–1270. <https://doi.org/10.1007/s40279-020-01274-z>
- Harter, S. (1981). A model of intrinsic mastery motivation in children: Individual differences and developmental change. In W.A. Collins (Eds.), *Aspects of the development of competence: the Minnesota symposium on child psychology* (pp. 215-255). Psychology Press.
- Henriques-Neto, D., Minderico, C., Peralta, M., Marques, A., & Sardinha, L. B. (2020). Test–retest reliability of physical fitness tests among young athletes: The FITescola battery. *Clinical Physiology and Functional Imaging*, 40(3), 173–182. <https://doi.org/10.1111/cpf.12624>
- Hosseini, S.A., & Besharat, M.A. (2010). Relation of resilience with sport achievement and mental health in sample of athletes. *Procedia – Social and Behavioral Sciences*, 5, 633-638. <https://doi.org/10.1016/j.sbspro.2010.07.156>
- Houltberg, B. J., Wang, K. T., Qi, W., & Nelson, C. S. (2018). Self-narrative profiles of elite athletes and comparisons on psychological well-being. *Research quarterly for exercise and sport*, 89(3), 354–360. <https://doi.org/10.1080/02701367.2018.1481919>
- Hwang, S., Machida, M., & Choi, Y. (2017). The effect of peer interaction on sport confidence and achievement goal orientation in youth sport. *Social Behavior and Personality: an international journal*, 45(6), 1007-1018. <https://doi.org/10.2224/sbp.6149>
- Joelson, R. B. (2017, August 2). Locus of control. *Psychology Today*. <https://www.psychologytoday.com/ca/blog/moments-matter/201708/locus-control>
- Joseph, I., Parry, A., Ogunkoya, F., Simon, M., & Ibhawoh, B. (2020). A systematic review of the Black student: Athlete experience and the McMaster athletics climate. https://marauders.ca/documents/2020/10/27/Report_McMaster_Black_Student_Athlete_Experience_Systemic_Review_FINAL_24Oct20.pdf
- Kent Sports Development Unit. (2016). *The Role of Fitness Testing*. https://kentsport.org/wp-content/uploads/2016/06/The_Role_of_Fitness_Testing.pdf

- Lloyd, R. S., Oliver, J. L., Faigenbaum, A. D., Howard, R., De Ste Croix, M. B. A., Williams, C. A., Best, T. M., Alvar, B. A., Micheli, L. J., Thomas, D. P., Hatfield, D. L., Cronin, J. B., & Myer, G. D. (2015). Long-term athletic development part 1: A pathway for all youth. *The Journal of Strength & Conditioning Research*, 29(5), 1439–1450. <https://doi.org/10.1519/JSC.0000000000000756>
- Machida, M., Otten, M., Magyar, T. M., Vealey, R. S., & Ward, R. M. (2016). Examining multidimensional sport-confidence in athletes and non-athlete sport performers. *Journal of Sports Sciences*, 35(5), 410-418. <https://doi.org/10.1080/02640414.2016.1167934>
- Madrigal, L., Romero, D.R., & Hamill, S.B. (2020). Examining the psychometric properties of the mental toughness scale in high school athletes. *Journal of Sport Behavior*, 43(4), 521-526. https://go.gale.com/ps/i.do?p=AONE&u=ocul_mcmaster&id=GALE%7CA632426128&v=2.1&it=r&sid=bookmark-AONE&asid=6c7b629a
- Manzo, L. G., Ilva, J. M., & Mink, R. (2001). The Carolina sport confidence inventory. *Journal of Applied Sport Psychology*, 13(3), 260-274. <https://doi.org/10.1080/104132001753144400>
- Marques, A., Henriques-Neto, D., Peralta, M., Martins, J., Gomes, F., Popovic, S., Masanovic, B., Demetriou, Y., Schlund, A., & Ihle, A. (2021). Field-based health-related physical fitness tests in children and adolescents: A systematic review. *Frontiers in Pediatrics*, 9, 640028. <https://doi.org/10.3389/fped.2021.640028>
- Martin, A. J. (2003). The student motivation scale: Further testing of an instrument that measures school students' motivation. *Australian Journal of Education*, 47(1), 88-106. <https://doi.org/10.1177/000494410304700107>
- Meadows-Fernandez, A. R. (2018). Extrinsic motivation: What is it and how does it work? Healthline. <https://www.healthline.com/health/extrinsic-motivation>
- Milford, T. T. (2003). Intention to pursue post-secondary education, and related factors, among Jamaican senior high school students [Doctoral dissertation]. <https://digitalcommons.andrews.edu/cgi/viewcontent.cgi?article=1579&context=dissertations>
- Morrison, D. K. (2017). Predictors of robust sport confidence in collegiate athletes (Publication No. 10645309) [Doctoral dissertation, Miami University]. ProQuest Dissertations Publishing. <https://www.proquest.com/openview/e7e5e76d80851dc24e72799e1d75f11e/1?pq-origsite=gscholar&cbl=18750&diss=y>
- Nemček, D., Kraček, S., & Peráčková, J. (2017). Rosenberg Self-Esteem Scale analyses among elite and competitive athletes, recreational athletes, and inactive

- individuals. *Journal of Physical Education and Sport*, 17. <https://doi.org/10.7752/jpes.2017.s5249>
- Price, P., Jhangiani, R., & Chiang, I. (2015). *Research methods of psychology – 2nd Canadian edition*. Victoria, B.C.: BCcampus. Retrieved from <https://opentextbc.ca/researchmetho>
- Puce, L., Marinelli, L., Mori, L., Pallecchi, I., & Trompetto, C. (2017). Protocol for the study of self-perceived psychological and emotional well-being of young Paralympic athletes. *Health and quality of life outcomes*, 15(1), 219. <https://doi.org/10.1186/s12955-017-0798-2>
- RBC Training Ground. RBC Training Ground. (2021). <https://www.rbctrainingground.ca/>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- Santos-Longhurst, A. (2019). Intrinsic motivation theory: Overview, factors, and examples. Healthline. <https://www.healthline.com/health/intrinsic-motivation>
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219-247. <https://doi.org/10.1037/0278-6133.4.3.219>
- Science Direct. Bicycle ergometer. (2021). <https://www.sciencedirect.com/topics/nursing-and-health-professions/bicycle-ergometer>
- Singer, R.N., Hausenblas, H.A., & Janelle, C. (2001). *Handbook of sport psychology* (2nd ed, pp. 340-361). John Wiley & Sons. <https://ebookcentral.proquest.com/lib/mcmu/detail.action?docID=316183>
- Skinner, Benjiman R. (2013). *The Relationship Between Confidence and Performance Throughout a Competitive Season*. [Master's thesis, Utah State University]. All Graduate Plan B and other Reports. <https://digitalcommons.usu.edu/gradreports/285>
- Stodolska, M., Sharaievska, I., Tainsky, S., & Ryan, A. (2014). Minority youth participation in an organized sport program. *Journal of Leisure Research*, 46(5), 612-634. <https://doi.org/10.1080/00222216.2014.11950345>
- Szczypińska, M., Samełko, A., & Guskowska, M. (2021) What predicts the mood of athletes involved in preparations for Tokyo 2020/2021 Olympic games during the Covid – 19 Pandemic? The role of sense of coherence, hope for success and coping strategies. *Journal of Sports Science and Medicine* (20), 421 - 430. <https://doi.org/10.52082/jssm.2021.421>

- Todd, S. Y., & Kent, A. (2003). Student athletes' perceptions of self. *Adolescence*, 38(152), 659–667.
- Tracy, A. J., & Erkut, S. (2002). Gender and race patterns in the pathways from sports participation to self-esteem. *Sociological Perspectives*, 45(4), 445–466. <https://doi.org/10.1525/sop.2002.45.4.445>
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Briere, N. M., Senecal, C., & Vallieres, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic, and amotivation in education. *Educational and Psychological Measurement*, 52(4), 1003-1017. <https://doi.org/10.1177/0013164492052004025>
- Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, 8(3), 221-246. <https://doi.org/10.1123/jsp.8.3.221>
- Vealey, R. S., Garner-Holman, M., Hayashi, S. W., & Giacobbi, P. (1998). Sources of sport-confidence: Conceptualization and instrument development. *Journal of Sport and Exercise Psychology*, 20(1), 54-80. <https://doi.org/10.1123/jsep.20.1.54>
- Vealey, R. S., & Knight, B. K. (2002, September). Multidimensional sport-confidence: A conceptual and psychometric extension. [Paper presentation]. Association for the Advancement of Applied Sport Psychology Conference, Tucson, Arizona, USA.
- Vierimaa, M., Erickson, K., Côté, J., & Gilbert, W. (2012). Positive youth development: A measurement framework for sport. *International Journal of Sports Science and Coaching*, 7, 601–614. <https://doi.org/10.1260/1747-9541.7.3.601>
- Weinberg, R., Grove, R., & Jackson, A. (1992). Strategies for building self-efficacy in tennis players: A comparative analysis of Australian and American coaches. *The Sport Psychologist*, 6(1), 3-13. [10.1123/tsp.6.1.3](https://doi.org/10.1123/tsp.6.1.3)
- Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N.B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of Health Psychology*, 2(3), 335-351. <https://doi-org.libaccess.lib.mcmaster.ca/10.1177/135910539700200305>
- Wood, R. (2008). Hand grip strength test. Topend Sports. <https://www.topendsports.com/testing/tests/handgrip.htm>
- Young, W. B. (2006). Transfer of strength and power training to sports performance. *International Journal of Sports Physiology and Performance*, 1(2), 74–83. <https://doi.org/10.1123/ijsp.1.2.74>

Zagórska, A., & Guskowska, M. (2014). A program to support self-efficacy among athletes. *Scandinavian journal of medicine & science in sports*, 24(3), e121–e128. <https://doi.org/10.1111/sms.12125>

Appendix A: Racism and Other Lived Experiences in an Athletic Community Scale (ROLEAC)

Methodology

According to our research findings, there are a lack of tools that measure the amount of discrimination and other racialized lived experiences in an athletic environment. As a result, we developed a survey called, “Racism and Other Lived Experiences in an Athletic Community Scale” (ROLEAC) to assess this concept in racialized youth athletes. We used the following steps to design this tool:

1. We identified existing tools that measure discrimination among racialized communities, including the Multigroup Ethnic Identity Measure - Revised (MEIM-R) (Blume, 2020; Caqueo-Urizar et al., 2021), Revised 28 - Item Racial and Ethnic Microaggressions Scale (R28REMS) (Blume, 2000), Scale of Ethnocultural Empathy (Blume, 2000), Critical Consciousness Scale (Blume, 2000) and Perceived Discrimination Scale (Williams et al., 1997).
2. We categorized the statements from these tools following these common themes: stereotypical behaviour or language, neglect, lack of support/support, offensive, oppression, discrimination and learning.
3. We compared these themes to those found in the paper “A Systematic Review of the Black Student-Athlete Experience and the McMaster Athletics Climate” (Joseph et al., 2020). This paper provided an overview of the anti-Black racism that student athletes have faced at McMaster University. In comparing the themes identified in the previous step to this paper, we substantiated our findings with the lived experiences of racialized student-athletes.
4. We modified questions on each of the tools that were related to the above themes so that they more accurately reflect the needs of racialized high-school athletes.
5. We consolidated the questions between each of the tools.
6. The remainder of the questions were added to ROLEAC.

ROLEAC has a long form with 59 statements and a short form with 20 statements. We developed two forms because the longer form is more detailed, capturing many specific racialized experiences. On the other hand, the short form is more broad and generalized. Both forms use a 5-point Likert scale and there is a scoring criteria where some statements are reverse scored. We recommend STAC to use ROLEAC at the beginning and end of their program to assess how these experiences have evolved over

time. It can also provide STAC with baseline data on how racialized youth athletes are impacted by such experiences thereby, providing a stronger incentive to receive funds to mitigate the barriers in reaching higher level sports and other opportunities.

ROLEAC Long Form (LF)

Section 1: Stereotypical Behaviour or Language in the Sports Environment

1. I have experienced derogatory comments based on my race.
2. People are shocked when they see my scholastic or professional success.
3. I have been in incidents where others on my teammates assume I am a part of a gang.
4. Someone on my team assumed I was not intelligent because of my race or ethnicity.

Section 2: Neglect in the Sports Environment

1. My team and coach neglected Black history month celebrations.
2. I never felt like I belonged on my sports team.
3. I feel ignored on my team or in my sport due to my race.
4. I have been told by my teammates or coach that I complain a lot about race.
5. I have been told by my teammates or coach that I should stop thinking about race.
6. My teammates or coach have avoided eye contact with me because of my race.
7. I have a strong sense of attachment to my own team.
8. I have positive feelings of belongingness in my team.
9. I am aware of the feelings associated with being the only person of a particular race or ethnicity in a sports team.
10. I know what it feels like to be the only person of a certain race or ethnicity in a sports team.
11. I understand the frustrations associated with having fewer opportunities to progress in a sport.
12. I understand the institutional barriers associated with having fewer opportunities to progress in a sport.

Section 3: Lack of Support/Support in the Sports Environment

1. My coaches have not taken my issues seriously.
2. My coaches have not considered the issues of other racialized students seriously.
3. My coaches are really good mentors
4. I can connect with my coaches.
5. Athletics administrators and coaches have shown up for personal meetings and followed up with me.
6. There have never been racist or ethnic jokes made on my sports team.
7. I support events that promote equity for racialized athletes.
8. My mentors and coaches have encouraged me to pursue higher education.
9. I support other racialized athletes when I feel like they are being taken advantage of.
10. I feel pride when other racialized athletes succeed publicly.
11. I can empathize and understand the experiences of other racialized athletes that are different from my own race or ethnicity.
12. I will support other racialized athletes if they go through discrimination.
13. I believe that all groups should be given equal support and chances to pursue higher level sports.
14. In my ideal world, racial and ethnic groups would be treated with respect and more equally.
15. I have supported my racial or ethnic teammates by participating in protests or organizations.
16. I have had discussions with my coaches and team about social issues.
17. I have a deep understanding of what my racial and ethnic group means to me.

Section 4: Offense in the Sports Environment

1. My team has never uttered out racial slurs.
2. I have never been called the N-word by coaches and teammates.
3. I openly indicate that I am offended if a racist joke is made about my race or ethnic background.
4. I openly indicate that I am offended if a racist joke is made about another race or ethnic background different from my own.

Section 5: Oppression in the Sports Environment

1. I am afraid to speak up on my team.
2. I get less playing time because of my race.

3. I get called out for my mistakes more often than my teammates because of my race.
4. I am being given more opportunities to move ahead in sports.
5. Coaches are honest with me about information.
6. Coaches were being dishonest about information
7. I agree that racial and ethnic groups are oppressed.
8. When other racial or ethnic groups go through oppression, I can empathize and understand their feelings.

Section 6: Discrimination

Because of my race or ethnicity...

1. I have been denied a scholarship.
2. I was not considered for a job.
3. I was not promoted.
4. I was fired.
5. I was provided with inferior treatment.
6. I am treated with less respect than others on my team.
7. Others think I am not intelligent.
8. Others are afraid of me.
9. People think I am dishonest.
10. I am called names and insulted.

Section 7: Learning

1. I have actively taken time to learn more about my ethnic group, as well as its history, traditions and customs.
2. I have taken actions that would enhance my understanding of my racial or ethnic background.
3. I talk to other people to learn more about my racial or ethnic background.
4. I am proud to be a racialized athlete.

ROLEAC Short Form (SF)

1. I have experiences where a team member or a coach has made stereotypical comments about my race.
2. Someone in my team thought I was not intelligent because of my race.

3. There have been team socials with stereotypical themes about race that have made me feel uncomfortable.
4. My coach has avoided me because of my race.
5. My team members ignore me because of my race.
6. I have a strong sense of belonging in my team.
7. I feel very lonely in my team because of my different race.
8. As a racialized athlete, opportunities for growth are restricted for me.
9. I am proud to be a racialized athlete.
10. I have positive mentors who are similar to me.
11. I have positive mentors who are different from me.
12. Coaches have neglected issues about race, reducing my sense of belongingness.
13. Racist jokes are commonly made that make me feel uncomfortable.
14. I participate in events to promote equity for people of racialized backgrounds.
15. When other racial athletes succeed, I feel pride.
16. I receive less playing time because of my race.
17. I am called out for my mistakes more often than other teammates.
18. Coaches are dishonest with me.
19. Coaches encourage me positively after I make mistakes.
20. My coaches and teammates respect me.

Scoring

Scoring (normal scoring):

- 5 = strongly agree = 4 points
- 4 = agree = 3 points
- 3 = neutral = 2 points
- 2 = disagree = 1 points
- 1 = strongly disagree = 0 points

Scoring (reverse scoring):

- 5 = strongly agree = 0 points
- 4 = agree = 1 points
- 3 = neutral = 2 points
- 2 = disagree = 3 points
- 1 = strongly disagree = 4 points

The higher the score, the greater the amount of experiences of discrimination and other racialized lived experiences.

For the long form survey the following are normally scored:

- Section 2: Neglect
 - Question #7 to #12
- Section 3: Lack of Support/Support
 - Question #3 to #17
- Section 4: Offensive
 - Question #1 to #4
- Section 5: Oppression
 - Question #4 to #5 and Question #7 to #8
- Section 7: Learning
 - Question #1 to #4

For the long form survey the following are reverse scored:

- Section 1: Stereotypical Behaviour or Language
 - Question #1 to #4
- Section 2: Neglect
 - Question #1 to #6
- Section 3: Lack of Support/Support
 - Question #1 to #2
- Section 5: Oppression
 - Question #1 to #3 and Question #6
- Section 6: Discrimination
 - Question #1 to #10

For the short term survey the following are normally scored:

- Question #6, #9, #10, #11, #14, #15, #19 and #20

For the short term survey the following are reverse scored:

- Question #1, #2, #3, #4, #5, #7, #8, #12, #13, #16, #17 and #18

Appendix B: Questionnaire on Intention to Pursue Post-Secondary Education for Athletes (QIPPSE-A)

Methodology

Based on our research, there is a lack of tools that can be used to assess intention to pursue post-secondary education for racialized high-school athletes who wish to become professional athletes. As a result, we developed QIPPSE-A to serve as an alternative tool to assess racialized student athletes' intention to pursue post-secondary education. We used a number of steps to develop QIPPSE-A:

1. We identified existing tools that assess intention to pursue post-secondary education for non-racialized and non-athlete students. The tools include the Academic Motivation Scale (Vallerand et al., 1992) and the Intention to Pursue Post-Secondary Education Questionnaire (IPPSE) (Milford, 2003).
2. We identified common themes that exist in these tools. In particular we determined that both tools were assessing the following items: intrinsic motivation, extrinsic motivation, amotivation, self-efficacy and value of education, locus of control, student satisfaction, parental support, peer influence, school climate and financial assistance.
3. We modified questions on each of the tools that were related to the above themes so that they more accurately reflect the needs of racialized high-school athletes who are pursuing post-secondary education as a means to become a professional athlete.
4. We consolidated the questions between the two tools.
5. The remaining questions were added to the QIPPSE-A tool

QIPPSE-A is divided into two parts, and each part includes a group of themes that were listed above, with the latter utilizing a 7-point scale and the former utilizing a 5-point scale. We recommend that STAC administer QIPPSE-A at the beginning and at the end of their Athletic Development Program so that they can assess the change in intention to pursue post-secondary education over time and determine the impact that their program had on this outcome.

QIPPSE-A Part 1

Why do you want to attend a post-secondary institution as an athlete?

Intrinsic motivation (7 point scale, 1= does not correspond, 7= corresponds exactly):

1. Because I experience pleasure and satisfaction while achieving.
2. For the pleasure I experience while surpassing myself in my studies and sports
3. For the pleasure that I experience while I am surpassing myself in one of my personal accomplishments.
4. For the satisfaction I feel when I am in the process of accomplishing difficult academic and athletic activities.
5. Because post-secondary education allows me to experience a personal satisfaction in my quest for excellence in my studies and athletic career
6. For the "high" feeling that I experience while playing sports.

Extrinsic Motivation (7 point scale, 1= does not correspond, 7= corresponds exactly):

1. Because I think that a college education will help me better prepare for a career in sports.
2. Because eventually it will enable me to enter the professional sports world.
3. Because this will help me make a better choice regarding my sports career orientation.
4. Because I believe that I will improve my competence as an athlete.
5. To prove to myself that I am capable of completing my college degree while being an athlete.
6. Because of the fact that when I succeed in school and sports I feel important.
7. To show myself that I am a dedicated and resilient person.
8. Because I want to show myself that I can succeed in my studies and athletic career.
9. Because eventually it will enable me to become a professional athlete.
10. In order to play sports professionally.
11. Because I want to have "the good life" later on as an athlete.
12. In order to have better income as an athlete later on.

Amotivation (7 point scale, 1= does not correspond, 7= corresponds exactly):

1. Honestly, I don't know; I really feel that I am wasting my time in school and playing sports.
2. I once had good reasons for going to college and becoming an athlete; however, now I wonder whether I should continue.
3. I can't see why I go to college and become an athlete and frankly, I couldn't care less.
4. I don't know; I can't understand what I am doing in school and in training.

QIPPSE-A Part 2

Self-efficacy and Value of Education (5- point scale, 1= strongly disagree, 5= strongly agree)

1. Post-secondary education will help me develop my full potential in athletics and beyond
2. Post-secondary education will help me become a responsible citizen.
3. Post-secondary education will help me to make more money in the future through sports.
4. Post-secondary education is important to ensure future success in sports.
5. Post-secondary education is the most important thing for me right now.
6. Post-secondary education is essential to help me develop good athletic ethic.
7. Getting good grades and performing well athletically is extremely important for me right now
8. I make plans for my life: I do not just wait for things to happen
9. My parents/guardians are the reason for my success in school and athletics
10. I plan my life so that I can work to make myself successful
11. If I achieve in school or sports, it is because I work hard at succeeding

Locus of Control (5- point scale, 1= strongly disagree, 5= strongly agree)

1. I see myself as a worthless person.
2. If life becomes unhappy, I can do something to change it
3. Luck is more important than hard work for success in school and sports.
4. The good decisions I make, I take responsibility for the results.
5. I often place the responsibility for my failure on others.
6. Most of my friends try to shun students who study and play sports.

Student Satisfaction (5- point scale, 1= strongly disagree, 5= strongly agree)

1. I have really enjoyed my years going to school and playing sports.
2. I am proud to be a student and athlete at my school.
3. I have not been comfortable at my school.
4. I feel really satisfied with being in school.
5. My school is a place where I feel loved by my peers.
6. My school is a place where I am a successful student and athlete.
7. My school is a place where I feel happy.

Parental Support (5- point scale, 1= strongly disagree, 5= strongly agree)

1. My parents or guardians believe that I will be a success in life.
2. My parents or guardians expect me to go to college.
3. My parents or guardians guide me in my plans to help me succeed.
4. My parents or guardians encourage me in my academic and athletic pursuits.
5. My parents or guardians expect me to earn good grades and achieve in athletics.
6. My parents or guardians are interested in my educational and athletic progress.
7. My parents or guardians are persons I can talk to about my plans for post-secondary education.
8. I admire the positive values of my parents.
9. I practice the positive values of my parents.

Peer influence (5- point scale, 1= strongly disagree, 5= strongly agree)

1. Most of my friends are not really interested in pursuing athletics at a post-secondary education.
2. Most of my friends are in a post-secondary institution as student athletes.
3. Most of my friends are planning to go to college as student athletes.
4. Most of my friends work very hard to succeed in school and sports.
5. Most of my friends are getting passing grades in school

School Climate (5- point scale, 1= strongly disagree, 5= strongly agree)

1. At my high school, teachers have been encouraging me to go to a post-secondary institution and become a student athlete.
2. At my high school, the guidance counselor is motivating me to go to a post-secondary institution.
3. At my high school, the principal is a very positive role model
4. My school is a place where teachers treat students with respect.
5. My school is a place where the development of moral values is encouraged.
6. My school is a place where students do well academically while also being athletes.
7. My teachers and coaches are able to make learning fun.
8. My teachers and coaches have the ability to treat students fairly
9. My teachers and coaches believe that I will be successful in school and athletics.
10. My teachers and coaches find time to listen to their students.
11. My teachers and coaches express confidence in my ability to do well
12. My teachers and coaches appear to understand how to relate to teenagers.
13. My teachers and coaches take a personal interest in me.
14. My teachers are helping me to become successful in my school work while also being an athlete.

Financial Assistance (5- point scale, 1= strongly disagree, 5= strongly agree)

1. Money for my post-secondary education is readily available
2. Money to pay for a post-secondary education will be difficult to find.
3. I often worry about how I will pay my post-secondary tuition.
4. I will need government financial assistance to go to a post-secondary institution.