National Youth Advocacy and Resilience Journal

Volume 5 | Issue 2 Article 1

January 2022

The Effectiveness of Teaching Life Skills Through Sport-based Interventions for Youth at Risk

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Recommended Citation

McCarthy, M. K., Harris, B. S., & Gregg, K. (2022). The Effectiveness of Teaching Life Skills Through Sport-based Interventions for Youth at Risk. *National Youth Advocacy and Resilience Journal, 5*(2). https://doi.org/10.20429/nyarj.2022.050201

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Abstract

Youth who are placed at risk have been found to experience adjustment difficulties, behavioral problems, academic challenges, and/or mental health concerns (Moreau et al., 2012). One resource for these youth involve sport-based interventions designed to enhance psychosocial wellbeing. Using a single-subject design, the current study examined the effectiveness of a life skills program through sport in a sample of strategically identified youth (Danish, 2002); two additional mental skill modules were also implemented. Participants included three male adolescents. Using basketball to implement the program, life skills included managing emotions, goal setting, relaxation, confidence, mental preparation, and seeking help from others. Participants responded to a life skills survey (Weiss et al., 2014) and mental skills assessment (Durand-Bush et al., 2001) to evaluate the program's effectiveness. Results suggested the intervention was effective in enhancing two of the three participants' ability to apply life skills learned in the intervention, supporting the use of sport-based, individualized interventions with similarly situated youth.

Keywords

At-risk youth, Youth at risk, Youth development Sport-based intervention, Life skills

The Effectiveness of Teaching Life Skills Through Sport-based Interventions For Youth-At-Risk

Terminology used to label and define "at risk" youth is fluctuating. Advocates, researchers, and practitioners are focusing on strengths-based approaches and recognizing the hardships experienced by youth typically labelled as at-risk (Jenson & Bender, 2014). At risk stems from the risk (and protective) factors that influence everyone. In defining risk for adolescents, Jenson and Bender (2014) state that risk factors include "individual, family, school, peer, and community level influences that increase the likelihood of becoming involved in problem behaviors" (p. 10). While the environmental and biological circumstances influencing youth placed in this category are often out of their control, their reactions and emotional responses to the situations may be altered by intentionally providing access to resources and targeted education. Young people who have increased risk factors may face adjustment difficulties, behavioral problems, academic failure, and dropout or mental health difficulties (Moreau et al., 2014) as well as a host of other factors to place them in an at risk category (Jenson & Bender, 2014). Sports-based interventions have been successful in supporting adolescents' life skills when certain criteria are included whether they have risk factors or not (Barnert, et al., 2015; Lubans, et al. 2012; Raposa et al., 2019). In the following section, the relationship between sports or activity-based programs and life skills are delineated by impact on (physical) health associated risks, social and emotional well-being, and mental skills.

Health Risks

In categorizing adolescents as at risk, researchers have included health-risk behaviors. Several studies have used the Youth Risk Behavior Survey (YRBS) to measure these health-risk factors (Dunn, 2014; Taliaferro, et al., 2010). This survey is administered among representative samples of students in grades 9 to 12 in the United States every odd year by the Centers for Disease Control and Prevention and has provided data about risk factors as well as protective factors for youth. For example, Johnson et al. (2014) determined that health-risk behaviors included substance use, sexual risk-taking, and violence. Dunn (2014) detailed looked at other health-risk behaviors by looking at dietary behaviors, physical activity, and unintentional injury as indicated by the survey.

These researchers have also analyzed the YRBS survey data for relationships between sport and physical activity and preventing youth from participating in unhealthy behaviors yielding mixed results (Dunn, 2014; Johnson et al., 2014). Using the YRBS data, Dunn (2014) looked at the relationship between physical activity, enrollment in a physical education class, and sports participation on the substance use practices of high school students. He found that cigarette usage decreased as physical activity increased. Contrasting this, the

results indicated an opposite relationship with smokeless tobacco, in that, as the number of teams a student played on increased, the likelihood the student used smokeless tobacco increased. Dunn suggested that individuals who value athletic performance are more likely to use smokeless tobacco compared to cigarettes to protect their cardiovascular endurance. Gender played a role in Dunn's (2014) study; as sport participation and physical activity appeared to be a risk factor for alcohol use for males but not females. Similarly, Johnson and colleagues (2014) examined the YRBS data and found a positive correlation between condom use and sports team participation for males and an inverse relationship between the number of sexual partners and sport participation for females. But both genders represented in the survey were more likely to carry a gun if they participated in sports teams. In both examples, gender plays a role in how risk factors and sports participation play out indicating youth development programs should consider both group behaviors and self-identified gender during the planning phases. In the study in this paper, all participants were males high school students.

Social and Emotional Well-Being

While the above research focused on physical health-risk behaviors as it correlates with sports participation, Lubans, Plotnikoff, and Lubans (2012) described the relationship between physical activity and social and emotional well-being in "at-risk youth" (*label applied by Lubans, et al., 2012*). In a systematic review, they analyzed different types of physical activity programs including outdoor adventure programs, sport and skill-based programs, and physical fitness programs. Lubans et al. (2012) found that sport and skill-based programs influenced areas such as improved self-esteem and "temperament in children with social cognitive and disruptive behaviors" (p. 9). However, based on their review, the researchers recommended caution in interpreting results due to the high risk of bias in many of the programs due to lack of control groups and conditions of the environments where the programs were implemented.

Research on sports-based interventions have noted impact on other life skills that build on social and emotional well-being (Kelly, 2012; Moreau et al., 2012). Kelly (2012) conducted a qualitative study on Positive Futures, a government-funded, sport-based intervention in England regarded as "Britain's largest national youth crime prevention programme" (Positive Futures, 2012, as cited in Kelly, 2012, p. 267). The program's focus has moved from solely focusing on crime reduction and considered social inclusion goals. Participants in the program were interviewed about their views of the program's effectiveness which included promoting self-esteem, achievement, positive relationships, and new opportunities. Kelly (2012) identified additional ways that sport-based interventions can impact crime reduction including changing people, changing environments, and changing responses. These principles may be adopted to assist

youth in developing certain life skills that will help them with decision-making as they endure certain unhealthy environments that are out of their control. Moreau and colleagues (2012) conducted a similar study interviewing participants of a program that targeted youth with and without risk factors using a cooperative model of sports intervention. They found that context and mindset were key to where youth are engaged and developed six recommendations for these types of programs including:

> (1) cooperation during sports activities; (2) "edutrainers" discipline, involvement and positive attitude; (3) moving the youths beyond their physical, psychological and social comfort zones; (4) the interplay between enjoyment and effort; (5) constant innovation in training content; (6) risk as a driving force for cohesion and social ties. (Moreau, et al., 2014, p. 97).

To further understand what principles and program designs could benefit youth at risk due to their living situations, Barnert and colleagues (2015) conducted interviews with incarcerated youth on protective and risk factors that led them to incarceration. By speaking directly to adolescents about their pathways to jail, the researchers documented the lived experiences from those who had been through it. While much of the interviews were focused on the roles different environments played in the youths' lives prior to incarceration, Barnert and colleagues (2015) also inquired about their internal needs which they categorized as "love and attention, discipline and control, and role models and perspectives" (p. 1366). These examples of internal need are mostly outside of the youths' control and point to the need for increased access to community resources. Several of the interviewed youth directly noted the need for "afterschool programs, including tutoring, vocational, and sports programs, to keep adolescents occupied and out of the streets while building life skills and fostering a sense of belonging" (Barnert, et al., 2014, p. 1369).

Many underfunded schools lack resources to provide a myriad of academic and personal growth-based programs to youth. Practitioners should consider the feasibility to provide programs in schools, where youth spend a great deal of their time, that target health promotion, self-management, and coping skills, including self-esteem/confidence. Indeed, Kwasky and Serowoky (2018) launched a pilot yoga program in a public school that resulted in high attrition, improved physical changes, and increased social relatability. Similar research has noted the importance of intent in programming to impact social and emotional wellness. Intentional training in goal setting can improve academic and behavioral activity in school (Filby, et al., 1999; Papacharisis, et al., 2005). Rapid fluctuations in emotion have been linked to maladaptive coping behaviors such as

substance use; thus, the researchers in the current study included a managing emotions module as well (Simons, et al., 2014). The ability of youth at risk to effectively communicate and seek out desired or necessary support is another skill having been identified as important for this population of youth. For example, Bender et al. (2018) explored the habits of youth experiencing homelessness including their hesitance to seek help from others.

Mental Skills

Separating mental skills and social and emotional well-being is difficult due to the embedding of both in overall life skills. The current study uses a mental skills assessment tool (*see methods section of this article).* While mental skills have been used in a wide variety of applied settings and even more so in team sports training, it is less likely to be the focus of programs with an identified sample of youth at risk. Application of mental skills training with youth at risk was inspired by the research on interventions used in general sport and/or youth populations.

In the sport psychology field, mental skills training is tied to improved physical skills. Some researchers have suggested benefits for different types of techniques associated with mental skills training programs including goal-setting to enhance perceptions of control in sports (Filby et al., 1999; Papacharisis, et al., 2005), imagery to enhance motivation (Thelwell & Greenlees, 2003; Skeens, 2017), and mastery of self-talk for focus, self-confidence, and coping with difficult situations (Hardy, et al., 2001). The benefits of these types of mental skills training can be applied to various settings that are encountered by youth.

For the present study, the mental skills included were concentration and mental preparation. Concentration is important for youth in academics and other areas of life. Mental preparation such as visualization is beneficial across areas for youth experiencing social, academic, and/or mental health concerns as well including within the process of teaching athletic skills (Skeens, 2017). Moody et al. (2003) included cognitive preparation in the social skills training component of the Youth Empowerment and Support Program (YES-P). The researchers observed an 82% increase in social skills attainment among the participants who lived in an inner-city neighborhood but there was no physical activity component.

Mental skills taught through sports-based interventions are effective when generalizable to other contexts where the youth find themselves. According to Papacharisis et al. (2005), “Life skills enhance the development of the psychological skills that are required to deal with the challenges of everyday life” (p. 248). Life skills are similar to physical skills in that they can be learned through demonstration and practice in order to form habits and routines. Papacharisis et al. (2005) emphasizes that with intentional programming, many skills learned in sports can be transferred to daily life such as “the ability to perform under pressure, solve problems, meet deadlines, set goals, communicate,

handle success and failure, work with a team, and receive feedback" (p. 248). These components are all considered mental skills in that they include "involves focusing on how youth participate and not just on how well they perform" (Danish et al., 2005, p. 53).

Similar to this study, Newman (2020) explored the impact of "sports programming that aims to facilitate life skill development and promote life skill transfer" (p. 645); most of the youth participating in Newman's program were considered at risk due to socioeconomic status. The experiences of the youth through qualitative interviews reflects the definitions of mental skills (or life skills) from their perspective and included "self-control, effort, grit, and personal responsibility" (Newman, 2020, p. 648). More importantly, the transfer of the mental skills was again highlighted as youth provided examples of using the skills taught in the sports program to other contexts.

Danish (2002) developed a formal life-skills program embedded in sports participation. Before beginning his own program, he was asked to work with sports teams through the NCAA YES program which stood for Youth Education through Sport. This program utilized student-athletes to serve as role models and teach life skills within the communities of their schools. Danish (2002) then created his program called SUPER, which stands for *Sports United to Promote Education and Recreation*. SUPER was designed to demonstrate the relationship between the skills that are taught while playing sports and their applicability to other settings such as home or school. The original program consisted of 18 modules with three areas in each: learning the physical skills related to the sport, learning life skills related to sports in general, and playing the sport. The SUPER program has been used in several sport and/or physical activity contexts, including basketball, soccer, golf, rugby, and volleyball (Danish, et al., 2005). Papacharisis and colleagues (2005) also implemented the SUPER program in an abbreviated format only using eight modules rather than the full 18. While the SUPER program has been used to work with youth already involved in sport teams, it has not been applied to working with youth who are viewed as at risk due to circumstance. Based on the effectiveness of sports interventions summarized above, this targeted group of youth may also benefit from programs that use sports as a means for teaching life skills.

While some of the abovementioned studies have demonstrated benefits for using physical activity or sport-based interventions for youth at risk, they have suggested mixed results in regard to the influence on youth. Therefore, the purpose of this study is to examine the effectiveness of an abbreviated sport-based intervention that teaches mental skills and life skills to youth at risk in a one-on-one setting. It is hypothesized that the ability for these youth to transfer life skills will increase after participating in this study. Also, it is hypothesized that the

ability for the youth to use mental skills will increase after participating in this study.

Methods

The following section outlines the method implemented to obtain the present study's sample, in addition to a summary of the participants' demographic information. Additionally, a description of the measures and intervention/program used throughout the study is provided. Finally, an overview of the procedures and single-subject design utilized and how data from this design were analyzed is described.

Participants

After receiving approval from the schools to recruit youth for the study, the first author used a demographic questionnaire to assess the following at-risk criteria for which the participants had to meet at least one: (a) coming from a low income family, (b) coming from a single parent home, (c) being a teen parent, (d) having previously dropped out or been removed from another school, (d) having a history of substance abuse behavior, (d) having been exposed to an emotionally or physically abusive environment, (e) having currently or previously received mental health services, and/or (f) having a grade point average below 1.5. These different characteristics have been commonly associated with youth at risk (Collingwood, 1997; Moreau et al., 2012). Administrators from the schools were given the demographic information and provided the researchers with a list of potential participants who would meet these criteria. Exclusion criteria included youth that may be prone to violent outbreaks or had a low attendance rate according to the school, and therefore, would not have been present for enough of the interventions.

The primary researcher originally recruited ten total participants from a convenience sample who provided consent to participate; however, two participants withdrew before the study began, one participant was 18 and could not be included, one withdrew himself after the second day of baseline testing stating that he no longer wanted to take the assessments, and one was suspended from the transitional school at the beginning of the intervention phase. The final sample consisted of five male participants ranging in age from 11 to 14 (See Table 1). This sample approximated Kazdin's (2011) recommendation of a sample size of at least six participants for single subject designs. Three of the participants were recruited from a charter school located in the southeast United States. While this charter school accepts all students in the county, it has a year-round program that is designed to support students who may have had challenges in traditional public-school settings but cannot afford or choose not to attend a private school. Two of the participants were recruited from a transitional school that educated students who were removed from other schools or who had recently

moved to the area and wanted to finish their schoolwork online rather than beginning a new school in the middle of the year.

The participants in the current study included students coming from a low-income family and/or a single parent home. One participant also reported having previously received mental health treatment, and two participants reported having previously been removed from another school. None of the parents or guardians stated the participant's grade point average, and each of the students participated in extracurricular activities including sports and religious groups. Three of the participants were currently on a basketball team. Given the participants were under 18, their parents or guardians were asked to provide written consent for their child's participation in this study. After consent was obtained, the students were asked to participate and provided written assent stating they understood what they will be asked to do during the study as well as the purposes for the study. The parents or guardians and participants also completed the 2014 Physical Activity Readiness Questionnaire+ (PAR-Q+; Warburton, et al., 2014) to ensure the participant was healthy and able to engage in the physical activity components of this project.

Table 1

Demographic Information

ID	Age	Grade	Race	Eth	Extra	SEC	Home	Parent	Remove/ dropout	Subs	Abuse	Mental Health
1	12	6	African-American	Non-Hisp	sports	low	Mom	No	No	No	No	No
2	14	8	African-American		sports	low		No	No	No	No	No
4	14	9	Caucasian	Non-Hisp	Relig groups	mid	Mom	No	No	No	No	Yes
5	11	6	African-American	Non-Hisp	sports	low	Mom	No	Yes	No	No	No
6	12	7	African-American	Non-Hisp	sports	low	Mom	No	Yes	No	No	No

Note. ID= Participant ID; Ethn=Ethnicity; Extra=extra-curricular activities; SEC=socioeconomic status based on income level; Home=people who live in the household of participant; Parent=teen parent; remove/drop out=removed or previously dropped out from another school; Subs=history of substance abuse; Abuse=exposed to physically or emotionally abusive environment; Mental health=currently or previously received mental health treatments; Non-Hisp=Non-Hispanic ethnicity; Relig groups=religious groups; blank spaces on the table represent a lack of response on the demographic questionnaire

Participants took part in a hybrid version of the SUPER program (Danish, 2002). While the program is not being implemented with an existing sport team, the structure provided by the program's modules allowed it to be applied to other areas while working with youth such as physical education classes and for the

present study, within the school setting where the participants spent a majority of their time each day. Research on the SUPER program has been documented when implemented with sports teams that focused on learning life skills through one sport. For that reason, the primary researcher used basketball as the singular sport to teach these life skills. In addition to the first author's previous experience with basketball, the accessibility of basketball was also a factor in choosing the sport for this study. The schools at which the study took place already had a basketball hoop and a basketball providing an area away from other students and teachers where the interventions could take place.

Instrumentation

To assess changes in the specific mental skills and life skills of interest to the present study two measures were utilized throughout the baseline and intervention phases of the study. The first measure included the Ottawa Mental Skills Assessment Tool-3 (Durand-Bush, et al., 2001; OMSAT-3) which assesses 12 different mental skills and life skills. Given the present authors utilized a different life skills measure specific for youth, only four subscales of the OMSAT-3 consisting of 29 items were used to assess changes in mental skills. These scales included belief/confidence, relaxation, focusing, and mental practice.

Life skills were also evaluated using the Life Skills Transfer Survey (Weiss, et al., 2014). For the purposes of the present study, only three of the eight subscales were utilized including those assessing goal setting, managing emotions, and getting help from others. Together, both measures allowed researchers to evaluate changes in these various skills across baseline to intervention phases of the study to examine the effectiveness of the implemented program.

Ottawa Mental Skills Assessment Tool-3

Some of these skills can be included in both life skills and mental skills, but for the purpose of this study the mental skills were assessed using the Ottawa Mental Skills Assessment Tool (OMSAT-3). The OMSAT-3 is an 85-item questionnaire with 12 mental skill scales (Durand-Bush, et al., 2001). However, for the present study, the participants only responded to four of the different subscales (29-item questionnaire) that measured the interventions provided including: belief/confidence, relaxation, focusing, and mental practice. The participants responded to each question on a 7-point Likert-type scale ranging from strongly disagree to strongly agree. An example of a belief/confidence question is: "*I believe that I have the personal capacity to reach my goals.* A relaxation example is: "*I find it easy to relax.*" The focusing subscale was reverse-scored. An example of this subscale includes: "*I lose my focus during daily training.*" Finally, the mental practice subscale included questions such as: "*I can easily*

mentally practice an entire skill." The four subscales that were used in this study received good Cronbach's alpha levels (.76-.84). Confirmatory factor analysis suggested the model fit well with the data (Durand-Bush, et al., 2001).

Life Skills Transfer Survey

To examine the effectiveness of the intervention in teaching the participants how to transfer life skills to other settings, they completed the Life Skills Transfer Survey (LSTS) before, during, and after the intervention (Weiss, et al., 2014). The LSTS is a 50-item self-report measure that reflects youths' perceptions on their ability to use life skills learned in one context and transfer it to another domain. The measure includes eight subscales, but for this study the participants only responded to questions from the goal setting, managing emotions, and getting help from others subscales that corresponded to the specific interventions resulting in a 20-item questionnaire for the students. Responses were given on a 5-point Likert-type scale including "really not true for me, not true for me, sort of true for me, true for me, and really true for me." Example questions for the subscales include "*I set goals to get better grades in school*" for the goal setting subscale. For managing emotions, questions were included such as, "*I calm myself down after receiving a bad grade.*" Lastly, the subscale for getting help from others included questions such as, "*I find good role models to help me.*" As a part of the measure's development, authors also demonstrated validity for its use with youth as young as the age of 10. All eight subscales achieved good Cronbach's alpha values (α=.80-.92). Structural validity was assessed for all eight subscales and revealed reasonable-to-good fit to the observed data (Weiss et al., 2014).

Design

This study was a single-subject design where the participants served as their own control groups and participated in the interventions individually. The single subject design integrating the SUPER program took place in three different phases: baseline, intervention, and return to baseline phases (see Table 2 for schedule of module implementation).

Intervention Procedures

While there are a total of 18 modules in the original SUPER program, the present project used six. The SUPER program has been used in an abbreviated timeline previously (Papacharisis et al., 2005). The abbreviated format used in this study included the full suggested length of time provided for each SUPER module. Due to the availability of the students regarding their school schedule, an abbreviated timeline was preferred. There were two modules for goal setting and one for each of managing emotions, relaxation, confidence, and asking for help from others when needed. This is a total of six modules but only five topic areas as goal

setting is divided into two modules. In addition to these six modules, there were two mental skills sessions added that included concentration and mental preparation.

Each module was applied to specific skills in the sport of basketball. The "Goal Setting" modules were applied to sprinting 40 yards over the two modules that were used. Goals were related to dreams that the participants had where they learned how to set specific and positively stated goals. In the second goal setting module, the participants focused on the importance of learning how to set goals that are in their control. The "Confidence and Courage" module from the SUPER program was partnered with dribbling tasks. The participants dribbled with one hand moving forwards and backwards. Then, they would switch hands and eventually do more difficult dribbling tasks like dribbling between the legs. The participants learned the importance of repetition and believing in oneself to increase confidence. The "Seeking Help from Others" SUPER module was used with passing drills teaching the participants how to rely on others to complete the pass. During the "Managing Emotions" SUPER module, the participants received negative feedback while completing shooting drills. The participants practiced shooting free throws during the "Relaxation" SUPER module. The primary researcher designed a group of stations including dribbling, shooting, jumping rope, and practicing defensive slides while they learned to concentrate on each individual station as they were performing the tasks. Lastly, a mental imagery script (Skeens, 2017) was used for mental preparation where the participants were introduced and listened to a script about shooting the basketball as time was running out in a game. The participants were then asked to physically perform this task.

Primary Researcher's Background

Because the participants were corresponding with the researcher individually, it is important to note the credentials of the primary researcher. The researcher has played basketball for almost 15 years in various recreational leagues, high school teams, and a collegiate club team. Having this skill set allowed the researcher to implement the interventions by showing the participants examples of what they are being asked to do. Also, the researcher has previous experience working with youth at a residential treatment facility and understands the importance of building rapport with these youth as well as the struggle some of these youth may have with trusting another adult that is asking to be a part of their lives. With these experiences the researcher was able to work well with the youth during these interventions on an individual basis.

Table 2

Schedule for Module Implementation

Day	Life Skill/Mental Skill	Basketball Skill
Before the study	Parents/guardians provided consent, participants provided assent, parents/guardians completed demographic questionnaire and PAR-Q+	
	Obtain baseline information	
1	SUPER module: "Setting Goals-Part 1"	Conditioning
3	SUPER module: "Setting Goals-Part 2"	Conditioning
4	SUPER module: "Confidence and Courage"	Dribbling
5	SUPER module: "Seeking Help from Others"	Passing
7	SUPER module: "Managing Emotions"	Shooting
8	SUPER module: "Relaxation"	Shooting free throws
10	Concentration and Focus	Stations: dribbling, shooting, jumping rope, defensive slides
12	Mental Preparation	Imagery script
	Obtain return to baseline information	

Note. There were four days in the intervention phase that were used for testing only days and did not include a module.

The baseline phase took place over the course of at least three days including one testing session per day or until stability of their data on the study's measures occurred. Participant 1 did not reach stability until after five testing sessions occurred while Participant 2 achieved stability after four testing sessions. Participant 4 was able to reach stability after the first three testing sessions which is the minimum recommended by standard single-subject methodology experts (Kazdin, 2011). The participants completed the LSTS and OMSAT during the baseline phase to obtain the participant's knowledge of life skills and mental skills prior to the intervention beginning. Having this phase at the beginning of the study allowed the researcher to develop rapport with the participants. While working with each one individually, the researcher was able to explain the study, assist the participants with any words or confusing questions from the surveys, and get to know the participants and some of their hobbies. Following this baseline phase, the twelve-day intervention phase began. The students participated in three sessions a week that included the intervention of either a SUPER module or mental skills training as well as a skills session associated with basketball followed by the LSTS and OMSAT assessments. The participants were assessed an additional 1-2 days per week. On days 2, 6, 9, and 11, the participants were only given the assessments and did not perform any basketball skills or learn a new mental skill or life skill.

After the twelve-day intervention, the participants again responded to the LSTS and OMSAT at least three times in the final week of the project in order to obtain return to baseline information. The participants never responded to more

than one testing session in the same day. Participant 4 was only available for two days for return to baseline testing due to the school's holiday schedule.

Data Analysis

To assess the effectiveness of the intervention, data was graphically represented for each participant across the baseline, intervention, and return-to-baseline phases. Visual inspection was used to review graphs by a group of trained researchers to determine actual changes in mental skills abilities as well as knowledge of transferable life skills. Researchers observed changes in magnitude that included changes in mean and changes in level. Rate of change was also analyzed including changes in trend and latency in change. Changes in mean refer to the shifts in mean rate of performance while changes in level refer to the shift in performance from the end of one phase to the beginning of the next. The tendency for data to show increases or decreases over time was represented by changes in trend. Latency of change refers to how quickly a change occurs after the end of a phase.

In addition to visual inspection, the researchers of the present study also used the *d* index as suggested by Glass et al. (1981) and was useful in single subject designs when the data did not show trends. The *d* index was used to describe the magnitude of treatment effects. Also, single subject designs may not change the trend or level of behavior but rather an increase or decrease in the stability of the behavior. An effect size to indicate the magnitude of such a treatment effect was computed (Kromrey & Foster-Johnson, 1996).

Results

Using the aforementioned visual inspection and quantitative assessment of the data, an evaluation of this abbreviated sport-based intervention designed to teach mental skills and life skills to the present sample of youth was conducted. These results utilize a graphical (see Figures 1-7) depiction of participants' data across baseline and treatment phases, in addition to an evaluation of participants' magnitude and stability of any observed changes. These evaluations allow for the hypothesis that the ability for youth at risk to transfer life skills would increase after participating in this study, and that the youth's use of mental skills will increase after participating in this study.

Participant 1

Participant 1 observed an increasing trend and an increase of the mean on the managing emotions, goal setting, seeking help from others, confidence, and mental practice subscales. Participant 1 demonstrated an increasing trend and mean on the focusing subscale, but the subscale was reverse-scored meaning that an increase in score suggested a decrease in focusing ability. The participant

appeared to experience greater variance on the entire focusing subscale when compared to the other subscales. Also, the participant experienced a decrease in level and mean on the relaxation subscale. The participant experienced greater variance in the baseline scores when compared to the intervention phase on each of the subscales except for focusing. Regarding latency, there was an immediate effect for goal setting, confidence, and focusing. On the relaxation subscale, the participant immediately experienced an increase, but this increase was not maintained during the intervention phase. The managing emotions subscale did not increase until after the second day of the intervention phase, the mental practice subscale did not increase until after the third day of the intervention phase, and the seeking help from others subscale did not increase until after the fourth day of the intervention phase (See Table 3).

Table 3

Participant 1 Data

Subscale	Baseline Mean	Intervention Mean	Return-to-baseline Mean	Mean Shift (*d*)	Change in Variability (f^2)
Managing Emotions	3.24	3.70	4.07	.50	.45
Goal Setting	3.83	4.28	4.61	.44	8.31
Seeking Help	4.12	4.42	4.62	.83	.61
Confidence	5.91	6.40	6.49	1.17	2.12
Relaxation	3.10	2.42	2.94	-0.31	1.22
Focusing	2.91	5.06	6.38	1.63	.88
Mental Practice	4.82	5.63	5.81	.60	1.56

Participant 2

Participant 2 experienced an increased trend and increase of the mean on the managing emotions, goal setting, seeking help from others, confidence, relaxation, and mental practice subscales. The only decrease in mean that was observed for the participant was on the focusing subscale. The participant also experienced greater variance in the baseline phases on each of the subscales when compared to their respective intervention phases. On the mental practice subscale, the variance for the intervention phase was zero leading to the inability to calculate the change in variability. Visual inspection appeared to show the participant experienced immediate effects on each of the subscales at the beginning of the intervention phase. It should be noted that the participant appeared to be regressing to the mean on each of the subscales showing similar scores at the end of the baseline phase that appeared at the beginning of the intervention phase (See Table 4).

Table 4

Participant 2 Data

Subscale	Baseline Mean	Intervention Mean	Return-to-baseline Mean	Mean Shift (*d*)	Change in Variability (f^2)
Managing Emotions	4.42	4.97	5.00	.92	34.69
Goal Setting	4.88	4.99	5.00	.69	2.81
Seeking Help	4.70	4.97	5.00	1.04	1.31
Confidence	6.00	6.13	6.14	.45	7.50
Relaxation	6.38	6.99	7.00	.74	62.81
Focusing	2.89	1.93	2.43	-.51	11.12
Mental Practice	6.53	7.00	7.00	.59	--

Participant 4

Participant 4 experienced an increase of the mean on the goal setting subscale, although visual inspection appeared to show a decreasing trend. The participant experienced a decrease on the focusing subscale with a decreasing trend. Additionally, the participant experienced a decrease in mean and a decreasing trend on the managing emotions, seeking help from others, confidence, relaxation, and mental practice subscales. Participant 4 experienced greater variance during the baseline phases when compared to the intervention phases on the managing emotions, relaxation, and focusing subscales and greater variance during the intervention phases on the goal setting, seeking help from others, confidence, and mental practice subscales. The effects were observed immediately on the managing emotions, goal setting, seeking help from others, relaxation, and mental practice subscales. The decrease on the confidence subscale did not occur until after the second day of the intervention phase, and the decrease on the focusing subscale did not occur until after the third day (See Table 5).

Table 5

Participant 4 Data

Subscale	Baseline Mean	Intervention Mean	Return-to-baseline Mean	Mean Shift (*d*)	Change in Variability (f^2)
Managing Emotions	3.33	3.07	2.83	-.90	.40
Goal Setting	2.94	3.04	2.92	.40	1.59
Seeking Help	3.33	3.08	2.50	-2.08	4.40
Confidence	4.36	4.08	3.93	-1.47	1.10
Relaxation	4.39	4.03	3.67	-1.03	.15
Focusing	4.05	3.93	3.79	-.22	.30
Mental Practice	4.19	3.90	4.00	-1.71	3.91

Participant 5

Participant 5 experienced an increasing trend and an increase of the mean on the managing emotions, goal setting, seeking help from others, confidence, relaxation, and mental practice subscales. The participant experienced decreases on the focusing subscale. Additionally, the participant experienced greater variances in the baseline phase when compared to the intervention phases of the managing emotions, goal setting, seeking help from others, confidence, and focusing subscale. The participant experienced greater variance in the intervention phase on the relaxation and mental practice subscales. Participant 5 experienced a latency of change on each of the subscales. The increase on the managing emotions subscale did not occur until after the second day of the intervention phase. The seeking help from others and confidence subscales did not experience increases until after the third day of the intervention phase. The decrease in scores on the focusing subscale and the increase on the mental practice subscale did not occur until after the fifth day of the intervention phase. The increasing trend on the goal setting subscale did not occur until after the sixth day of the intervention phase, and the increase on the relaxation subscale did not occur until after the seventh day (See Table 6).

Table 6

Participant 5 Data

Subscale	Baseline Mean	Intervention Mean	Return-to-baseline Mean	Mean Shift (*d*)	Change in Variability (f^2)
Managing Emotions	3.45	3.76	3.83	.79	.25
Goal Setting	4.00	4.03	4.75	.07	.23
Seeking Help	3.65	4.00	3.70	.43	1.42
Confidence	5.09	5.32	5.21	.21	2.10
Relaxation	5.33	5.39	5.17	.18	.93
Focusing	5.71	5.66	5.36	-.10	.20
Mental Practice	5.59	5.75	5.72	.94	2.44

Participant 6

Participant 6 experienced increases in mean on the managing emotions, goal setting, seeking help from others, confidence, relaxation, and mental practice subscales. The participant also experienced an increase in mean on the focusing subscale. The participant experience greater variance during the baseline phases when compared to the intervention phases of the managing emotions, goal setting, seeking help from others, and relaxation subscales. The confidence, focusing, and mental practice subscales experienced greater variance in the intervention phase. The effects were immediate on the goal setting, confidence, and focusing subscales. The managing emotions and mental practice subscales did not increase until after the second day of the intervention. The relaxation subscale did not maintain an increase in scores until after the fifth day of the intervention phase while the seeking help from others did not maintain an increasing trend until after the seventh day (see Table 7).

Table 7

Participant 6 Data

Subscale	Baseline Mean	Intervention Mean	Return-to-baseline Mean	Mean Shift (*d*)	Change in Variability(f^2)
Managing Emotions	3.37	4.25	4.44	.87	2.24
Goal Setting	4.06	4.42	4.67	1.89	.53
Seeking Help	3.10	4.11	4.33	1.53	.31
Confidence	5.24	5.98	6.14	3.36	1.17
Relaxation	4.83	6.14	6.11	1.51	1.25
Focusing	3.86	5.40	6.33	5.31	3.76
Mental Practice	5.56	6.03	6.41	2.14	2.05

Discussion

The purpose of the present study was to examine the effectiveness of an abbreviated sport-based intervention that teaches mental skills and life skills to youth at risk based on a certain set of criteria (*see the recruitment section of this paper)*. The hypotheses in this investigation were twofold: (a) It was expected that the ability for each youth meeting a specific set of criteria to transfer life skills would increase after participating in this study; and (b) it was expected that the ability of each youth to use mental skills would increase after participating in this study. The life skills assessed in the present study included managing emotions, goal setting, and seeking help from others; mental skills included confidence, relaxation, focusing, and mental practice. Overall, results from the current study partially supported the effectiveness of this abbreviated sport-based intervention for youth with specific risk factors. Participants 1, 2, 5 and 6 in particular supported both of the hypotheses on almost all of the subscales. Participant 4 evidenced some improvements within some of the life skills and mental skills.

Life Skills

Regarding the life skills targeted in the present study, four of the five participants increased in mean scores on the managing emotions subscale throughout the study, supporting hypothesis *a.* With single subject ABA designs, researchers typically expect to observe a decrease in scores after the intervention has been removed. However, that was not the case for Participants 1, 2, 5 and 6 as their scores continued to increase into the return to baseline phase that may suggest the participants were able to retain the information about transferable life skills and mental skills. According to Byiers et al. (2012), not all behaviors are reversible and therefore may not exhibit decreases after the intervention phase. On the goal setting subscale, all five of the participants demonstrated increases also supporting hypothesis *a*. There may have been greater support for the goal setting subscale due to the researcher doing two different intervention days with goal setting while every other skill was only placed into one intervention session. On the seeking help from others subscale, four of the five participants showed a similar pattern of increasing throughout the study further supporting hypothesis *a*.

Mental Skills

Mental skills demonstrated similar trends for each of the participants as they had shown for the life skills subscales. Confidence increased throughout the study for Participants 1, 2, 5 and 6, supporting hypothesis *b.* For the relaxation subscale, three of the five participants experienced an increase which partially supports hypothesis *b.* Participant 1 had the lowest mean during the intervention phase; however, the mean for the baseline phase may have been the greatest due to the

second testing session having a much higher score than any other testing session throughout the entirety of the study. While single subject designs do not suggest removing outliers, researchers suggest making a note about the changes the outliers can make in discussing the results of the study (Richards et al., 2013). Three of the five participants experienced decreases on the focusing subscale providing partial support for hypothesis *b* as well. On the mental practice subscale, four of the five participants experienced increases supporting hypothesis *b*.

Individualization of Programming

The current study utilized a single subject design to examine the effectiveness of teaching life skills through sport-based interventions within a service provision format for youth. According to Byiers et al. (2012), studies that utilize single subject designs are said to provide moderate evidence if there is evidence of an effect, but the results include at least one demonstration of no effect. Papacharisis and colleagues (2005) noted the limitations that sports alone have for teaching these skills and emphasized the importance of teaching life skills using sports rather than expecting them to be learned from simply participating in sports. While the SUPER program was originally designed to be implemented in groups (Danish, 2002), this study focused on each participant individually. The current study added to the literature regarding these intentionally designed sports-based interventions when considering the self-reported changes in behavior across participants. The flexibility of the program allowed this to occur effectively because the researcher still had the ability to choose which activities would be beneficial for each lesson. While the current study used a portion of an existing program, it further expanded the program's ability to be used in individual settings.

For example, one of the goal setting modules stated that a student should aim at a target that relates to the sport and repeat the statement, "I will make it" to highlight the importance of stating a positive goal. The researcher had the ability to say the goal would be to make a basketball shot and see how the student performs while saying the positive statement. The participants were still asked the same questions that groups have been asked previously using the SUPER program (Danish, 2002). The results of this study suggest that this particular program can be effective when used with individuals in addition to the studies that have previously shown its effectiveness in group settings (Danish, 2002; Papacharisis et al., 2005). Some sport or physical activity-based interventions that have been implemented in group settings have experienced mixed results (Kelly, 2012; Lubans et al., 2012; Moreau et al., 2012).

Working individually with the participants allowed the researcher to develop rapport with them. In a national study of male youth and mentorship

programs, Raposa et al. (2019) found that similar interests and activity preferences were a factor in length of mentor-mentee relationships. Noting that participants could self-select into this current study, basketball may have been a shared preferred activity between the participant and primary researcher. Specifically related to sports participation and further promoting this idea of individualized mentorship, Johnson et al. (2014) noted that having a connection to a specific adult was one variable mediating better health-related choices in youth. The participants had access to the same researcher throughout this current study. They were able to discuss various topics with the researcher regarding how they were doing and how they were enjoying the study. This type of interaction provided the researcher with the insight to individualize for each participant's needs and supports the choice to analyze the scores by individual progress versus comparing across groups or between individuals. While youth at risk are often lumped into the same category, they have different characteristics and circumstances that differentiate their outcomes. Single subject designs allowed these youth to progress at their own speed rather than be compared to the group or an arbitrary average.

Another adaptation made for the current study was using the SUPER program in an abbreviated format. Papacharisis and colleagues (2005) have previously used SUPER in an eight-week program, but the current study only worked with the participants for five weeks. While the participants in this study were accessible for the entirety of the five weeks at their school, other populations of youth may not be as accessible as the current study's population such as foster care or residential facilities.

Limitations

One of the limitations observed within the current study was the amount of assessments given to the participants. The participants were assessed at least four times a week during the study that may have led to burnout for the participants. The participants did speak with the researcher about the frustrating aspect of the study being that they had to respond to the questionnaires almost every day (Gipson, et al., 2018). While the researcher sat with each participant while he responded to the assessments, the participant could have simply been skimming the questions and responding based on memory rather than truthful answers. This may have been the case for Participant 2 who responded in a similar manner to each of the questionnaires during the intervention phase even though the current study assumed each participant responded to the questionnaires honestly every time they were taken. Another limitation of the current study is the lack of generalizable data. The current study only includes five participants who met the criteria but were still in school. While the intent was not for generalizability to a larger population of youth, these results are valuable to planners of sport-based

interventions with youth, especially in considering set up and individualization of programming. Because the study design included the use of a single-subject methodology, a smaller sample size is not uncommon compared to experiential designs given the present design involves the participants serving as their own control group as well. The characteristics of these five participants will not be the same as other youth at risk. Lastly, a limitation to this intervention was the inability to adapt each module to the individual for a completely different sport. As with any other activity-based intervention, each youth had his own individual needs and interests that differed from other students. Participants 1, 2, 5, and 6 demonstrated more increases in the various subscales when compared to Participant 4. This may have been due to Participant 4's lack of interest in basketball. A future study could include the use of an interest survey to include participants who enjoy the sport being used. A programming and/or research recommendation would be to not only find activities that are specifically appealing to each participant but also match them with a mentor who could provide one-on-one training.

One of the other challenges with single subject designs is the inability to remove outliers from the data. It should be noted that Participants 1 and 2 experienced days of assessments where their scores were not within a consistent range as observed on other sessions of the study. For Participant 1, the second day of testing in the baseline phase appeared to show dramatically different scores when compared to any of his other assessments taken throughout the study. It is unknown what was occurring on day two for the participant that may have altered the scores on the assessments without making assumptions. Participant 2 experienced lower scores on most of the subscales on the first day of testing in the baseline phase. Visual inspection of the participant's data suggested the participant's scores may have been regressing to the mean and revealing the true scores that represent the mental skills and life skills abilities. These possible outliers were the reasoning behind more baseline testing days rather than the recommended three for those participants (Kazdin, 2011). Utilizing more testing sessions during the baseline phase allowed the participants' scores to reach stability before beginning the intervention phase. These outliers influenced mean scores of the baseline phases for the participants which were also associated with changes in mean shift. Additionally, the outliers affected visual inspection when discussing possible trends that may have occurred during the course of the study. Outliers also influenced the variances in the baseline phases that were used to measure the effect sizes.

Future Directions

Future studies should continue examining the effectiveness of an abbreviated life skills program using single subject design. However, future studies should utilize

fewer assessments per week to measure the success of the intervention. The combination of single subject design and qualitative data collection could add rich data that reflect perceived changes and benefits youth experience after participating in similar programs. The youth could reflect on their own data with the researcher to consider progress. The participants could also provide invaluable feedback regarding their experiences in the program that could be used for individual and group-based program improvement (Gipson, et al., 2018). In this same line of reasoning, an area of future research is examining the reasons why group settings may have variable responses and questioning if it is due to the settings of the interventions or other pressures such from peers. The individualization of this program contributed to the effectiveness of teaching selective life skills and may have reduced some of the uncontrollable factors of group settings.

The current study shows the adaptability of a program like SUPER that can be used in an abbreviated format choosing topics that may be specific to the youth that are participating. While the current study used basketball, the SUPER program uses language in each module that can be applicable to all sports, so future researchers can choose what is accessible to them when working with different populations. While the current researchers were interested in using sports as an avenue for teaching life skills, there are many different settings that can be used to achieve this goal based on the interests, needs, and strengths of specific populations. This could include skills-based areas like art, music, and STEM. Researchers could examine integration of programs into group homes or residential treatment facilities and the effectiveness an intervention like this would have in those environments.

Further, examining the effectiveness of this abbreviated sport-based intervention within a school setting over longer periods of time would contribute to the research on length of effects. While the abbreviated intervention was effective, a study that utilizes a longer period of time and includes post-testing assessments in order to assess the youth's abilities to retain the life skills and mental skills learned in the intervention may further describe the effectiveness of sport-based interventions. Life skills interventions need to be designed to have lasting impact on the youth. These sessions and interventions could be implemented into physical education or elective classes or sport practices to reach more youth. Lastly, future studies could implement a mood questionnaire that may help assess the outliers observed in the study. The mood questionnaire could be a simple assessment that could determine how the day is going for that individual. If the participant was having an "off day" based on the variation in responses, the researcher may be able to explain some of the outliers observed.

References

Barnert, E., Perry, R., Azzi, V., Shetgiri, R., Ryan, G., Dudovitz, R., Zima, B., & Chung, P. (2015). Incarcerated youths' perspectives on protective factors and risk factors for juvenile offending: A qualitative analysis. *American Journal of Public Health, 106*(7), 1365-1371. doi:10.2105/AJPH.2014.302228

Bender, K., Begun, S., Durbahn, R., Ferguson, K., & Schau, N. (2018). My own best friend: Homeless youths' hesitance to seek help and strategies for coping independently after distressing and traumatic experiences. *Social Work in Public Health, 33,* 149-162. https://doi.org/10.1080/19371918.2018.1424062

Byiers, B., Reichle, J., & Symons, F. (2012). Single-subject experimental design for evidence-based practice. *American Journal of Speech-Language Pathology, 21*, 397-414. doi: 10.1044/1058-0360(2012/11-0036)

Collingwood, T. (1997). Providing physical fitness programs to at-risk youth. *Quest, 49*, 67-84. https://doi.org/10.1080/00336297.1997.10484224.

Danish, S. (2002) *SUPER: (Sports United to Promote Education and Recreation) Program: Leader Manual* (3rd Ed.). Virginia Commonwealth University.

Danish, S. Forneris, T., & Wallace, I. (2005). Sport-based life skills programming in the schools. *School Sport Psychology: Perspectives, Programs, and Procedure, 21*(2), 41-62. https://doi.org/10.1300/J370v21n02_04

Dunn, M. (2014). Association between physical activity and substance use behaviors among high school students participating in the 2009 youth risk behavior survey. *Psychological Reports: Disability & Trauma, 114*(3), 675-685. https://doi.org/10.2466/18.06.PR0.114k28w7

Durand-Bush, N., Salmela, J., & Green-Demers. (2001). The Ottawa Mental Skills Assessment Tool. *The Sport Psychologist, 15*, 1-19. https://doi.org/10.1123/tsp.15.1.1

Filby, W., Maynard, I., & Graydon, J. (1999). The effect of multiple-goal strategies on performance outcomes in training and competition. *Journal of Applied Sport Psychology, 11*, 230-246. https://doi.org/10.1080/10413209908404202

Gipson, C. M., Hunt, T., & Moore, M. T. (2018). Lessons learned from a nontraditional sports program: CrossFit Kids for Youth at Risk. *National Youth-At-Risk Journal*, *3*(1), 25-37. https://doi.org/10.20429/nyarj.2018.030104

Glass, G., McGaw, B., & Smith, M. (1981). *Meta-analysis in social research*. Sage.

Hardy, J., Gammage, K., & Hall, C. (2001). A descriptive study of athlete self-talk. *The Sport Psychologist, 15*, 306-318. https://doi.org/10.1080/10413209908404202

Jenson, J.M. & Bender, K.A. (2014). *Preventing child and adolescent problem behavior: Evidence-based strategies in schools, families, and communities.* Oxford University Press.

Johnson, K., Eisenberg, M., Bearinger, L., Fulkerson, J., & Sieving, R. (2014). Relationships between sports team participation and health-risk behaviors among alternative high school students. *American Journal of Health Education, 45*, 158-165. https://doi.org/10.1016/j.childyouth.2014.05.025

Kazdin, A. (2011). *Single-case research designs: Methods for clinical and applied settings. (2nd Ed.).* Oxford University Press.

Kelly, L. (2012). Sports-based interventions and the local governance of youth crime and antisocial behavior. *Journal of Sport and Social Issues, 37*(3), 261-283. https://doi.org/10.1177/0193723512467193

Kromrey, J. & Foster-Johnson, L. (1996). Determining the efficacy of intervention: The use of effect sizes for data analysis in single-subject research. *Journal of Experimental Education, 65*(1), 73-93. https://doi.org/10.1080/00220973.1996.9943464

Kwasky, A. N., & Serowoky, M. L., (2018). Yoga to enhance self-efficacy: An intervention for at-risk youth. *Archives of Psychiatric Nursing, 32,* 82-85. https://doi.org/10.1016/j.apnu.2017.10.009

Lubans, D., Plotnikoff, R., & Lubans, N. (2012). Review: A systematic review of the impact of physical activity programmes on social and emotional well-being in at-risk youth. *Child and Adolescent Mental Health, 17*(1), 2-13. https://doi.org/10.1111/j.1475-3588.2011.00623.x

Moody, K., Childs, J. & Sepples, S. (2003). Intervening with at-risk youth: Evaluation of the youth empowerment and support program. *Pediatric Nursing, 29*(4), 263-270. https://pubmed.ncbi.nlm.nih.gov/12956545/

Moreau, N., Chanteau, O., Benoit, M., Dumas, M., Laurin-lamothe, A., Parlavecchio, L., & Lester, C. (2014). Sports activities in a psychological perspective: Preliminary analysis of adolescent participation in sports challenges. *International Review for the Sociology of Sport, 49*(1), 85-101. https://doi.org/10.1177/1012690212452361

Newman, T. J. (2020). Life skill development and transfer: "They're not just meant for playing sports." *Research on Social Work Practice,30*(6), 643-657. https://doi.org/10.1177/1049731520903427

Papacharisis, V., Goudas, M., Danish, S., & Theodorakis, Y. (2005). The effectiveness of teaching a life skills program in a sport context. *Journal of Applied Sport Psychology, 17*, 247-254. https://doi.org/10.1080/10413200591010139

Raposa, E. B., Ben-Eliyahu, A., & Olsho, L. E. W. (2019). Birds of a feather: Is matching based on shared interests and characteristics associated with longer youth mentoring relationships? *Journal of Community Psychology, 47*, 385-397. https://doi.org/10.1002/jcop.22127

Richards, S., Taylor, R., & Ramasamy, R. (2013). *Single subject research: Applications in educational and clinical settings (2nd Ed.).* Independence, KY: Wadsworth Publishing.

Simons, J. S., Wills, T. A., & Neal, D. J. (2014). The many faces of affect: A multilevel model of drinking frequency/quantity and alcohol dependence symptoms among young adults. *Journal of Abnormal Psychology, 123,* 676-694. https://doi.org/10.1037/a0036926

Skeens, L. M. (2017). Guided imagery: A technique to benefit youth at risk. *National Youth-At-Risk Journal, 2*(2), 92-106. https://doi.org/10.20429/nyarj.2017.020207

Taliaferro, L., Rienzo, B., & Donovan, K. (2010). Relationships between youth sport participation and selected health risk behaviors from 1999 to 2007. *Journal of School Health, 80*(8), 399-410. DOI: 10.1111/j.1746-1561.2010.00520.x

Thelwell, R. & Greenlees, I. (2003). Developing competitive endurance performance using mental skills training. *The Sport Psychologist, 17*, 318-337. DOI:10.1123/tsp.17.3.318

Warburton, E., Jamnik, V., Bredin, S., & Gledhill, N. (2014). The 2014 physical activity readiness questionnaire for everyone (PAR-Q+) and electronic physical activity readiness medical examination (ePARmed-X+). *Health and Fitness Journal of Canada, 7*(1), 80-83. https://doi.org/10.14288/hfjc.v4i2.103

Weiss, M., Bolter, N., & Kipp, L. (2014). Assessing the impact of physical activity-based youth development programs: Validation of the Life Skills Transfer Survey (LSTS). *Research Quarterly for Exercise and Sport, 85*, 263-278. DOI: 10.1080/02701367.2014.931558

FIGURES

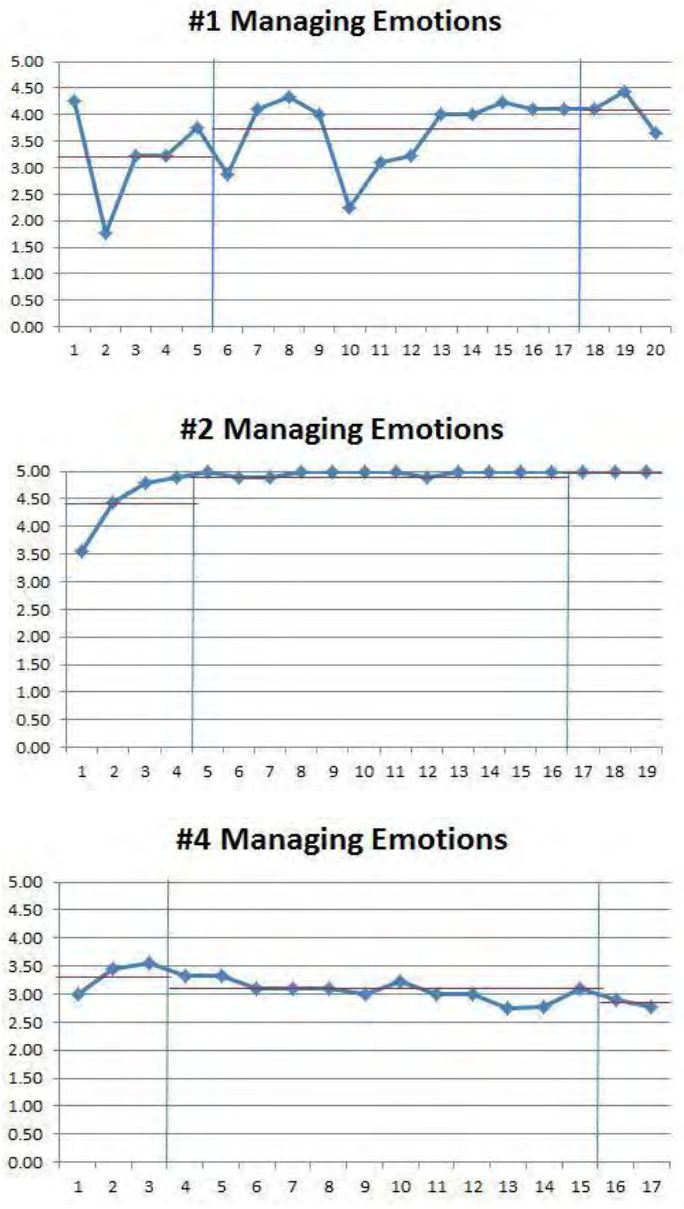

Figure 1. Participants' scores on the managing emotions subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

Figure 2. Participants' scores on the goal setting subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

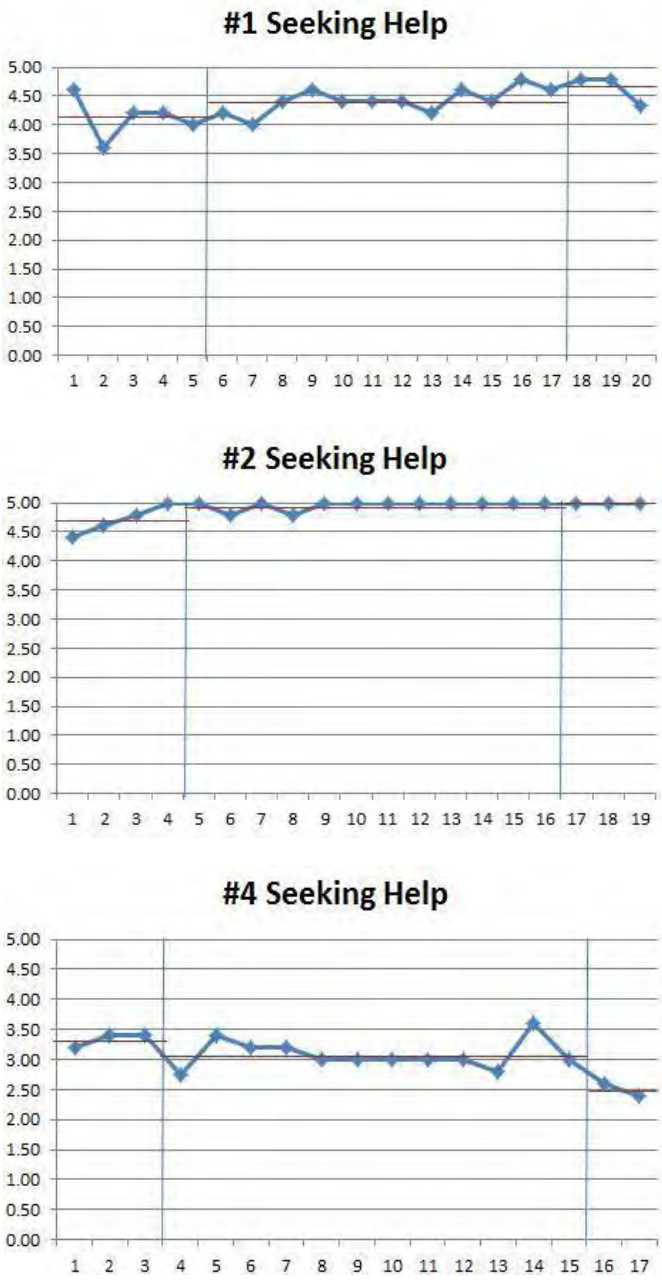

Figure 3. Participants' scores on the seeking help from others subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

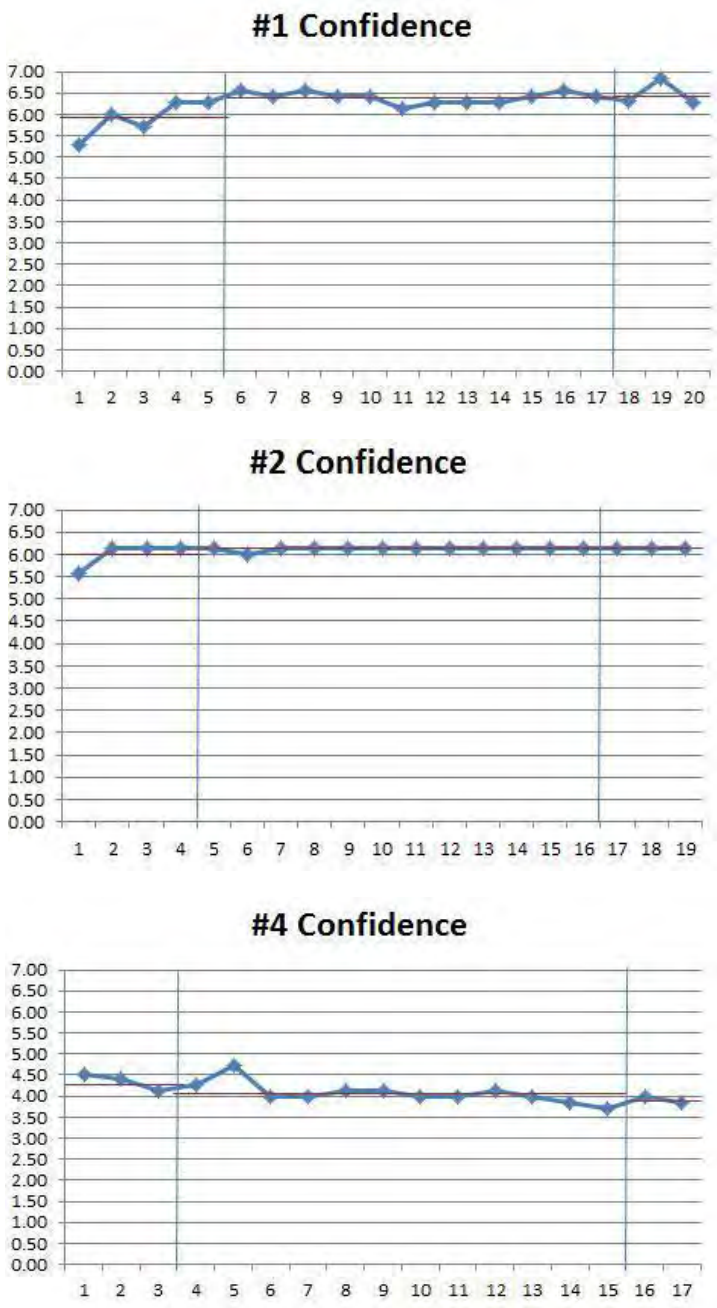

Figure 4. Participants' scores on the confidence subscale. *Note*. The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

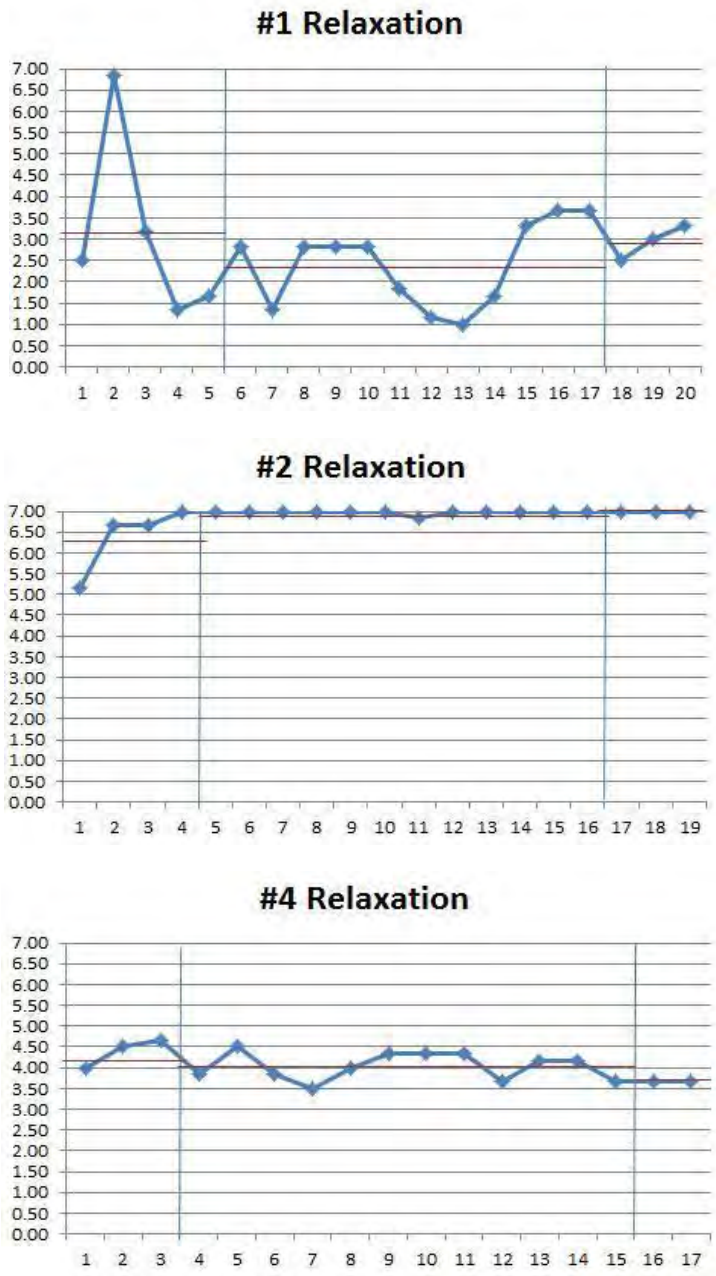

Figure 5. Participants' scores on the relaxation subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

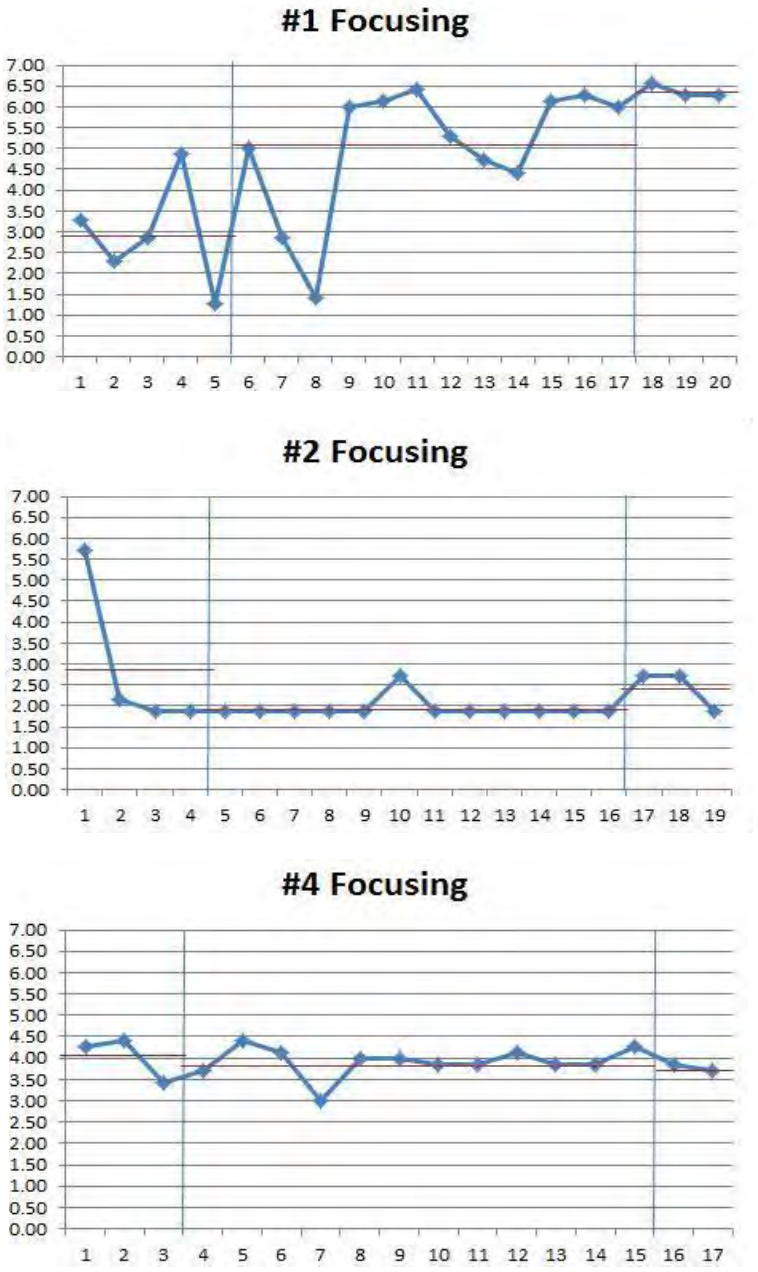

Figure 6. Participants' scores on the focusing subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.

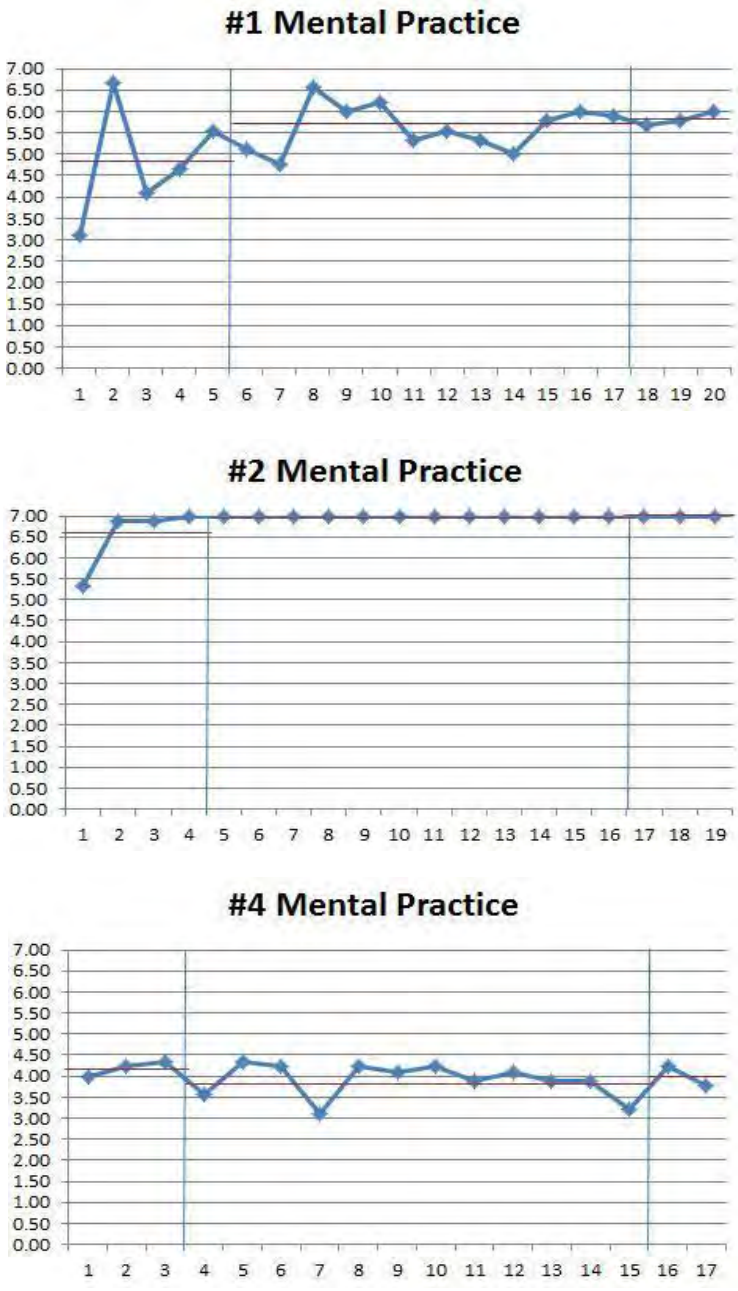

Figure 7. Participants' scores on the mental practice subscale. *Note.* The vertical blue lines depict change in phase between the baseline and intervention phase and again between the intervention and return to baseline phase. Horizontal red lines depict mean scores for that phase.