

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Manuscript accepted for publication in *Journal of Applied Sport Psychology*

<https://doi.org/10.1080/10413200.2019.1573204>

**Development, Implementation, and Evaluation of an Athlete-Informed Mental Skills
Training Program for Elite Youth Tennis Players**

Lea-Cathrin Dohme^a, Gordon A. Bloom^a, David Piggott^b, and Susan Backhouse^b

^a *Department of Kinesiology and Physical Education, McGill University, Montreal, Canada*

^b *Institute of Sport, Physical Activity and Leisure, Leeds Beckett University, Leeds, United
Kingdom*

January 18, 2019

Abstract

Informed by athletes' psychological needs, the current qualitative study developed, implemented, and evaluated a 15-month mental skills training (MST) program for elite youth athletes. The MST was divided into three phases that included a nine-month pre-intervention, a two-month intervention, and a four-month evaluation phase. The intervention consisted of three interactive workshops which were delivered to 11 competitive British youth tennis players (aged 8 to 15 years) and their coach (age = 34). The intervention was informed by data that was collected throughout a nine-month pre-intervention phase including longitudinal observations, field notes, and semi-structured interviews. The intervention was evaluated over a four-month period through observations, field notes, athlete-workshop data, and a semi-structured interview with the coach. Results reinforced the value of the longitudinal pre-intervention phase by highlighting that the establishment of rapport between the researcher and athletes enhanced the meaningfulness and content of the MST program. Additionally, an increase in athletes' use and regulation of PSCs was identified as a result of athletes' improved understanding of psychological skills (i.e., self-talk, imagery, performance routines) and characteristics (i.e., focus, emotional control) (PSCs). Finally, the MST program fostered a shared subject specific language between athletes and their coach, enhancing the openness and frequency with which PSCs were talked about. Practical guidelines for future sport psychology interventions with youth athletes and their coaches are provided.

Lay Summary: A 15-month mental skills training program was conducted with youth tennis players to enhance their ability to regulate their focus and emotional control. Practical guidelines for future interventions with youth athletes and their coaches are provided.

Keywords: talent development; youth sport; psychological skills training; qualitative methods.

24 Development, Implementation, and Evaluation of an Athlete-Informed Mental Skills Training
25 Program for Elite Youth Tennis Players

26 A plethora of research has attested to the important role of mental skills training (MST)
27 for elite athletic performance (Gould & Maynard, 2009; Hardy et al., 2017). Despite pleas from
28 Vealey (1988) and Côté, Lidor, and Hackfort (2009) about the value and importance of MST
29 with youth athletes, the majority of MST research has focused on elite adult athletes. This is
30 unfortunate since well-developed psychological skills (i.e., athletes' ability to use learned
31 methods to regulate their psychological characteristics) and characteristics (i.e., trait-like
32 dispositions which, despite being relatively stable, can be regulated through the use of
33 psychological skills) can enhance young athletes' likelihood of fulfilling their athletic and
34 personal potential (Dohme, Backhouse, Piggott, & Morgan, 2017; MacNamara, Button, &
35 Collins, 2010). For example, young athletes face many challenges and stressors throughout
36 adolescence such as coping with losses, injuries, balancing sport, school, and their social life, as
37 well as selection and deselection from teams (Larsen, Alfermann, & Christensen, 2012). Experts
38 have suggested that youth athletes with well-developed psychological skills and characteristics
39 (PSCs) are better placed to negotiate these challenges and stressors (Henriksen, Stambulova, &
40 Roessler, 2010), and potentially avoid early drop out or burnout (Gould & Carson, 2008).

41 Recently, a growing number of studies have started to investigate the effects of MST on
42 elite youth athletes (e.g., Fortes et al., 2018; Fournier, Calmels, Durand-Bush, & Salmela, 2005;
43 Ong & Griva, 2017; Sharp, Woodcock, Holland, Cumming, & Duda, 2013). For example,
44 Fournier et al. (2005) evaluated the effects of a 10-month MST program on the performance of
45 10 nationally ranked youth female gymnasts ($M_{\text{age}} = 12$). The MST program consisted of 25 half
46 hour sessions that targeted the development of relaxation, self-talk, goal-setting, focusing, and
47 visualization skills. The results indicated that athletes' performance on the vault, bars, beam, and

48 floor improved throughout the MST program. In addition to performance improvements, MST
49 with elite youth athletes can also enhance athletes' knowledge of and ability to use psychological
50 skills. For instance, Sharp et al. (2013) conducted a MST program with 21 Scottish elite male
51 rugby players ($M_{\text{age}} = 15$). The program consisted of nine one-hour sessions that were delivered
52 over a six-month period and taught players psychological skills such as goal setting, self-talk,
53 arousal control, imagery, and pre-competition routines. Focus groups with the athletes and four
54 coaches suggested that the MST program increased athletes' knowledge of psychological skills,
55 aided team cohesion, and increased athletes' openness, honesty, and self-regulation. Collectively,
56 these empirical studies indicate that MST programs can enhance youth athletes' performance and
57 psychological development, although some limitations in the research exist.

58 For instance, few studies exist that were informed by athletes' psychological needs rather
59 than the content of sport psychology literature. Experts such as Henriksen, Larsen, Storm, and
60 Ryom (2014) have suggested that youth athletes and their immediate others (e.g., parents or
61 coaches) should be consulted prior to developing and implementing MST programs to fully
62 grasp athletes' specific psychological needs. Second, qualitative research methods have rarely
63 been used to evaluate MST programs in youth sport. Although quantitative research methods
64 have revealed that MST programs can positively affect youth athletes' performances, qualitative
65 research strategies could further our understanding of youth athletes' experiences and
66 perceptions of MST programs by offering insight into what, how, and why athletes learned
67 (Sparkes & Smith, 2014). Third, sport participation has long been understood as a means for
68 youth and adolescents to develop fundamental psychosocial characteristics such as self-
69 confidence, interpersonal competencies, and emotional control (Côté, Bruner, Erickson,
70 Strachan, & Fraser-Thomas, 2010; Pierce, Kendellen, Camiré, & Gould, 2018), yet most MST
71 programs have been focused on the improvement and measurement of youth athletes' athletic

72 performance. Future MST programs should aim to facilitate both youth athletes' athletic as well
73 as psychosocial development. Finally, some authors offered limited insight into the content of
74 their MST programs for youth sport athletes resulting in a lack of clear description of the content
75 of these types of programs (Visek, Harris, & Blom, 2009). To gain insight into guiding principles
76 for youth athlete MST programs, it is necessary to examine the reflective accounts of sport
77 psychology practitioners who have shared their experiences working with youth athletes (e.g.,
78 Foster, Maynard, Butt, & Hays, 2016; Howells, 2017). For instance, after interviewing 12
79 experienced sport psychology practitioners from the United Kingdom, Foster et al. (2016) found
80 that practitioners employed various strategies to adapt their consultation practices to the needs of
81 youth sport participants, including the use of role-modelling and comparative narratives. Along
82 the same line, Howells (2017) offered recommendations following consultation sessions with a
83 nine-year-old gymnast over a 24-week period, including (1) simplifying complex information,
84 (2) making MST fun by including enthusiasm and patience and avoiding dry and factual
85 information, (3) individualizing content by considering athletes' unique characteristics, and (4)
86 offering relevant practical examples, as well as appropriate content and delivery mediums such
87 as technological aids. These recommendations are important to consider as experts suggested
88 that youth athletes constitute a distinct challenge for sport psychology practitioners due to their
89 level of cognitive development (Gould & Nalepa, 2016; Kipp, 2018). More precisely, McCarthy,
90 Jones, Harwood, and Olivier (2010) concluded that younger athletes between the ages of 10-15
91 held different understandings of PSCs compared to more mature athletes.

92 Taken together, youth athletes are now perceived as a growing and special client base for
93 sport psychology practitioners (Henriksen et al., 2014). Despite this, a paucity of empirical
94 research exists that examines the effects of MST programs on youth athletes' understanding of
95 psychological concepts, as well as their ability to use psychological skills to regulate or enhance

96 their performance and personal development. Moreover, MST programs are not commonly
97 informed by athletes' needs and are evaluated through quantitative research methods. As such,
98 the purpose of this study was twofold. First, the study aimed to develop and implement a MST
99 program for elite youth athletes that was informed by athletes' psychological needs. Second, the
100 study aimed to evaluate the MST program by investigating if, how, and what mental skills
101 athletes learned through qualitative research methods.

102 **Methods**

103 The study was underpinned by critical realism, a philosophical paradigm that allows for
104 the in-depth exploration of social phenomena, and the epistemology of reduction, a cyclical
105 research process that aims to bring researchers as close as possible to the reality of the studied
106 phenomena (Pawson & Tilley, 1997). Action research is one method used within critical realism
107 that reflects the nature of reduction. It has been defined as “a form of collective self-reflective
108 enquiry undertaken by participants in social situations in order to improve the rationality and
109 justice of their own social or educational practices, as well as their understanding of these
110 practices and the situations in which these practices are carried out” (Kemmis & McTaggart,
111 1988, pp. 5-6). Subsequently, a 15-month action research study that included the development,
112 implementation, and evaluation of three MST workshops for competitive youth tennis players
113 and their coach took place. Action research purports an in-depth familiarization with an
114 environment before any action is taken (McNiff, 2013). This action is often planned through a
115 collaborative effort of several individuals and includes the identification of a problem, planning
116 of action steps to solve (or clarify) the problem, implementation of these steps, and evaluation of
117 the intervention (McNiff, 2013). The interactive nature of the process enables individuals to
118 learn from each other, which facilitates the understanding of complex situations from several
119 perspectives (McNiff, 2013). The current 15-month action research study was divided into three

120 phases (a nine-month pre-intervention, a two-month intervention, and a four-month evaluation
121 phase) that involve a cycle of planning, acting, monitoring, reflecting, and evaluating (Evans,
122 Hardy, & Fleming, 2000).

123 **Participants**

124 One private English tennis club that specifically focused on the athletic development of
125 young tennis players was chosen for this longitudinal study (Sparkes & Smith, 2014). In total,
126 170 (120 male and 50 female) athletes, ranging from 3-15 years of age, trained regularly in the
127 tennis club. From these 170 athletes, 11 British male players were classified as elite because of
128 their ranking in the top 15 of their respective age groups in the country. According to guidelines
129 from the Lawn Tennis Association, the 11 players were divided into two age-specific
130 performance groups (A1 = ages 8-11; A2 = ages 12-15). The groups included two sets of
131 brothers. Of these four athletes, one was part of group A1 and three were in group A2. At the
132 time of the study, players engaged in approximately nine hours of structured training each week
133 at the club. None of the athletes had been exposed to a formal MST program prior to the current
134 workshops.

135 The head coach of these athletes played an important role in the MST intervention. The
136 coach was a 34-year-old British male with 18 years of coaching experience, who held a Lawn
137 Tennis Association (LTA) Level 3 coaching qualification. He started to play tennis at the age of
138 three, went through an extensive talent development process himself, and represented his county
139 from the age of 10 to 18. He started to coach full-time at the club after completing an
140 undergraduate degree in Town and Country Planning at an English university. Apart from
141 participating in a four-hour workshop called “Coaching Kids for Self-Belief” that was offered by
142 the LTA as part of coaches’ continuous personal development, the coach had no previous
143 experience of formal sport psychology education.

144 To help inform the intervention, 15 parents (P_{1-15} , $M_{age} = 48$, $SD = 6.16$) were also part of
145 the study. Apart from three instances in which only one parent per athlete participated, both
146 mother and father of each athlete were included in the study. In total, this sample consisted of
147 seven fathers and eight mothers. All parents were British except for two who were Polish.

148 **Procedure**

149 Ethical approval was granted by the university's ethics committee. Following this, the
150 coach of the tennis club was contacted since he agreed to serve as the gatekeeper for this study.
151 Consequently, the coach informed the athletes and their parents about the purpose of the study.
152 Eleven athletes collected an information and consent form package from the coach that included
153 parent and athlete information sheets, as well as parent consent and athlete assent forms. All
154 eleven athletes returned the signed consent and assent forms, and were subsequently included in
155 the intervention.

156 **Data Collection**

157 Given that qualitative research is a subjective process in which researchers bring their
158 own history, assumptions, values, and perspectives, it is important to offer a brief description of
159 the main researcher's background and experiences, as well as the role and experiences of the co-
160 authors (Braun & Clarke, 2013). The lead researcher was born and raised in Germany and had
161 extensive tennis experience, competing nationally from the age of four to 20 and being a
162 qualified Level 3 tennis coach. She was confident applying sport psychology principles to the
163 sport of tennis given her experiences as a player and coach, postgraduate studies in sport
164 psychology, and leadership of international coach and athlete education programs that were
165 informed and evaluated through qualitative research methods. These experiences enhanced her
166 ability to communicate technically with the coach, athletes, and parents, and to develop a MST
167 program that offered relevant examples and sport specific MST drills. In addition, each data

168 collection phase was supported by three co-authors, all of whom have extensive experience
169 working in youth sport settings. Specifically, the first co-author is a Certified Mental
170 Performance Consultant with the Canadian Sport Psychology Association and a Certified Youth
171 Sport Coach within the Coaching Association of Canada. The second co-author is a Certified
172 Level 3 Basketball Coach and renowned coach educator, and the third co-author is a Chartered
173 Sport and Exercise Psychologist with the British Psychological Society and Health and Care
174 Professions Council.

175 **Pre-Intervention Phase (9 months).** In line with action research protocols (McNiff,
176 2013), the objective of the pre-intervention phase was to develop an in-depth understanding of
177 players' psychological needs through a collaborative and reflective effort of athletes' parents,
178 coach, and the researcher. This process sought to inform the development and implementation of
179 an intervention that would address athletes' psychological needs.

180 To achieve these objectives qualitative research methods were employed as these enable
181 researchers to understand individuals' lived experiences from several perspectives through
182 observations and sustained dialogues (i.e., member reflection; Smith & McGannon, 2018), thus
183 providing rich and holistic insights into athletes' experiences, needs, and interests (Braun &
184 Clarke, 2013). Subsequently, the first author spent Wednesday and Thursday afternoons in the
185 researched environment for a period of nine months prior to the commencement of the MST
186 program. During this time, she engaged in two observation approaches, namely 'participant-as-
187 observer' and 'observer-as-participant' (Sparkes & Smith, 2014). For the first four months of the
188 pre-intervention phase, the researcher adapted the role of a participant-as-observer to immerse
189 herself in the researched environment and forge authentic relationships with participants. While
190 being a participant-as-observer, the researcher got actively involved in the researched
191 environment by taking on the role of a hitting partner or player of the group. According to

192 Sparkes and Smith (2014), the “advantage of this type of observation is the ease with which the
193 researcher-participant relationships can be forged” (p. 101). Despite this, the method limited the
194 researcher’s ability to take detailed field notes, make fully conscious observations, and engage
195 participants in sustained dialogues. As a result, she adopted an observer-as-participant approach
196 for the final five months of the pre-intervention phase. During this time, the researcher’s active
197 involvement in the training sessions was minimal; allowing her to ask questions, probe
198 participants’ thinking, take detailed field notes, and move around the research environment more
199 freely, while still being accepted as part of the group (Sparkes & Smith, 2014). Additionally, this
200 approach allowed the researcher to engage participants in reflective conversations that clarified
201 or expanded upon already collected data (Carr & Kemmis, 1988; Smith & McGannon, 2018).
202 During the pre-intervention phase, the researcher spent a total of 172.5 hours in the researched
203 club and 13 hours at two athlete tournaments. In total, 87 pages of field notes were collected.

204 To enrich the observational data that was to inform the athlete MST program, data were
205 also collected through semi-structured interviews with all 15 parents and the coach during the
206 final five months of the pre-intervention phase¹. All interviews were audio recorded and
207 transcribed, lasted approximately 70 minutes, and ranged from 53 to 109 minutes. Although the
208 parents and coach’s interview guides differed slightly, both consisted of open-ended questions
209 that required parents and the coach to elaborate on their (a) understanding of sport psychology
210 (e.g., How would you describe sport psychology?), (b) approach to PSCs development (e.g., Do
211 you engage in any specific behaviours to develop your child(ren)/athletes mentally?), and (c)
212 challenges of youth athletes’ psychological development (e.g., Have you ever experienced
213 challenges when trying to develop your child(ren)/athlete mentally?). In total, 485 pages of

¹ Interview guides are available upon request by contacting the corresponding author at LDohme@cariffmet.ac.uk.

214 interview transcripts were collected and stored using the computer software NVivo10. Along
215 with the observational data, this information provided a foundation upon which the content of
216 MST program could be developed.

217 **Intervention Phase (2 months).** The objective of the intervention phase was to enhance
218 athletes' psychological characteristics identified as improvement worthy during the pre-
219 intervention phase. To do so, athletes were provided with a MST program that was guided by a
220 cognitive-behavioural consultancy approach (cf. Mace, 1990). This approach helped teach
221 athletes that their thoughts and feelings positively and negatively affected their performance, and
222 that these emotions and thoughts could be challenged, intervened, and controlled using
223 psychological skills, such as pre-performance routines and positive self-talk.

224 During the MST program, athletes engaged in various tasks that offered insight into their
225 understanding of psychological concepts. To explore this understanding and facilitate the
226 evaluation of the program through data collection, the workshops were video recorded and
227 program workbooks photocopied after the completion of the intervention phase. In addition,
228 anonymous feedback from the athletes about the MST program was collected on post-it notes
229 after every workshop. On these notes, athletes outlined what they liked and disliked about the
230 workshop and described something they had learned and then implemented during the on-court
231 activities. The feedback was used to enhance forthcoming workshops.

232 **Evaluation Phase (4 months).** The objective of the evaluation phase was to identify if,
233 what, and how athletes learned during the intervention phase. Several data sources were used to
234 achieve this objective including athlete-workshop data, observations, field notes, and a semi-
235 structured interview with the coach. More specifically, the first author spent an additional 40
236 hours over a four-month period in the researched environment following the workshops to
237 monitor, reflect, and evaluate the effects of the intervention (Evans et al., 2000). During this

238 time, she adapted an observer-as-participant approach, whereby her active involvement in the
239 training sessions was minimal. This allowed the researcher to make detailed observations and
240 engage athletes, parents, and the coach frequently in informal, yet sometimes critical reflections
241 about the effects of the intervention (Sparkes & Smith, 2014). In total, 34 pages of field notes
242 were collected. In addition, a 60-minute semi-structured interview was conducted with the coach
243 that aimed to elicit information about athletes' learning and the coach's perception of the
244 workshops. Questions such as "What was your general impression of the workshops?", "Why do
245 you feel that the workshops were appropriate for the athletes?", "What do you think athletes
246 learned from the workshops?", "What elements of the workshops do you think helped the
247 athletes to learn these things?", and "Have you noticed a change in athletes' behaviours?", were
248 asked. Follow-up probes allowed the researcher to gain a detailed understanding of the coach's
249 answers (e.g., "Can you give me an example of this?" or "What does this look like in practice?").
250 In total, 12 pages of interview transcripts were collected and stored using the computer software
251 NVivo10.

252 **Data Analysis**

253 Inductive thematic analysis was used to analyse all data sets, which included the field
254 notes from participant observations, athlete-workshop data, and semi-structured interviews
255 (Braun & Clarke, 2013). Thematic analysis allows for the synthesis and organization of large
256 amounts of data that explores psychological and social phenomena (Braun & Clarke, 2013). In
257 addition, it offers rich descriptions of the data collected by identifying, analysing, interpreting,
258 and reporting common patterns or themes that emerge from the data (Sparkes & Smith, 2014).
259 Drawing on Braun and Clarke's (2013) thematic analysis guidelines, a six-step data analysis
260 process was applied. This included (1) familiarization with the data; (2) generating initial codes;
261 (3) searching for and identifying themes; (4) reviewing themes; (5) defining and naming themes;

262 and (6) writing the report. More specifically, the first author began the data analysis process by
263 listening to and reading the data until she felt truly immersed in it. After familiarization with the
264 data was established, the researcher started to organize the data extracts into segments that
265 encompassed the same or similar pieces of information. A code was then assigned to each
266 segment. The third and fourth phase of the thematic analysis process were conducted
267 simultaneously. First, the researcher set out to identify themes across the established codes. The
268 themes were reviewed through peer reflection and critical friends (Smith & McGannon, 2018).
269 More insight into this process is given in the “Quality Standards” section. Phases five and six of
270 the thematic analysis are outlined in the results section.

271 **Quality Standards**

272 Several methods were implemented to help ensure the rigor, authenticity, and
273 trustworthiness of the data collection and analysis process. First, to facilitate an in-depth
274 familiarization with the researched context, the first author embedded herself into the
275 environment for a total of 15 months (Smith & Sparkes, 2014). This allowed for authentic,
276 trusting relationships between the participants and herself to be forged. Second, the prolonged
277 immersion allowed for sustained dialogue with the participants. During this process ‘member
278 reflection’ was engaged in, which led to additional data being collected and other data being
279 discussed (Smith & McGannon, 2018). For instance, the researcher would frequently engage
280 participants in informal conversations to explore and clarify the interpretation of findings to
281 guard against any biases unduly influencing this process. According to Smith and McGannon
282 (2018), this process produces rigorous qualitative research as it facilitates a robust and
283 intellectually enriched understanding through the generation of additional insight. Third, rich
284 data sets were collected through a variation of data collection methods (i.e., observations, field
285 notes, and interviews) and participants (i.e., parents, athletes, and coaches) (Sparkes & Smith,

286 2014). Finally, the researcher was immersed in a vibrant and interdisciplinary research
287 community consisting of academics working in disciplines such as coaching, youth sport
288 development, and sport psychology. Consequently, the researcher was surrounded by a host of
289 ‘critical friends’, affording her the opportunity to critically discuss and reflect upon her findings,
290 potential biases, and research processes on a weekly basis (Smith & McGannon, 2018).

291 **Results**

292 A 15-month action research study was conducted that included a pre-intervention (i.e.,
293 identification of a problem and planning of action steps to solve the problem), intervention (i.e.,
294 implementation of action steps), and evaluation (i.e., evaluation of the intervention) phase. This
295 section begins by offering insight into the themes that emerged from the nine-month pre-
296 intervention phase, including how these informed the content of the two-month intervention
297 phase. This is followed by a brief overview of the intervention’s content. The section concludes
298 by presenting the themes that emanated from the four-month evaluation phase. Pseudonyms are
299 used throughout the results to ensure participants’ anonymity. To identify participants, athletes
300 aged 8-11 are marked as A1s, athletes aged 12-15 as A2s, and parents with the letter P.

301 **Pre-Intervention Phase: Building Rapport and Identifying Athletes’ Psychological Needs**

302 Action researchers seek to develop an in-depth understanding of an environment before
303 manipulating and adjusting some of its key features in order to bring about positive change
304 (McNiff, 2013). To allow for an in-depth understanding to be developed, it is important that
305 researchers establish an authentic relationship with their participants. This section begins by
306 offering insight into the rapport building process, before presenting athletes’ psychological needs
307 identified through a collaboration with athletes, their parents, and the coach. The section is
308 framed using the themes that emerged from the data analysis of the pre-intervention phase:

309 *building rapport* and *athletes' psychological needs – focus and emotional control*. Each theme is
310 presented below and quotes and field notes used to illustrate participants' experiences.

311 **Building rapport.** It was important that the first author established an authentic
312 relationship with participants to gain an understanding of athletes' psychological needs. As the
313 following field notes outline, it took several months to establish the desired rapport with athletes:

314 On my first day, the coach introduced me to the athletes as 'a former high level
315 tennis player, who still plays good tennis, and has a bunch of coaching
316 experience. She also does sport psychology, which makes her like a helper for our
317 minds. This means that she can perhaps help us to improve your performances,
318 wherefore she will assist me with our training for a while. Be nice to her'.

319 Nevertheless, the athletes commonly come in and shout 'Hi coach', chat to him
320 about all sorts, and eventually go 'Thanks coach, bye', while I am stood right next
321 to him, with a big smile on my face, still getting no recognition. When the coach
322 tells the athletes to chat to me, they sit as far as possible away from me and go
323 bright red. Will they ever "be nice to me"? (*Field note 10-06-2015*)

324 Finally! Today I am feeling very accepted by the group. The players are starting
325 to talk to me in a relaxed manner, make jokes (occasionally on my cost), offer
326 more than one word answers, sit with me without the coach having to tell them to
327 do so, and even shouted 'Thanks [researchers name], see you tomorrow' after
328 today's session. They are finally starting to accept me! (*Field note 16-09-2015*)

329 Only after athletes' initial shyness was overcome, was the researcher able to get to know
330 the athletes through increasingly authentic conversations and observations:

331 The athletes are really opening up to me now. I am learning something new about
332 them each day, such as what they do in their free time, who their friends are, why
333 they are playing tennis, what is going on in school, etc. (*Field note 08-10-2015*)

334 In addition to spending considerable time in participants' environment by attending
335 training sessions, competitions, and social events, it is believed that the researcher's background,
336 personality, educational and immersive research approach enhanced her acceptance among the
337 athletes and coach. For instance, being able to hit with the athletes and talk about her past
338 experiences as well as current tennis events, was reported to have fostered an authentic
339 relationship between the athletes and researcher:

340 The boys talk a lot about you. They are very impressed by your background. You
341 played competitively, coached in America and played for the University's first
342 team. All stuff my boys are dreaming of doing. You are good role model and
343 inspire them. (Stephen, P8)

344 Finally, the coach reported a strong liking of the researcher's immersive and educational
345 approach:

346 I know you haven't really started to properly teach us stuff yet, but you have
347 helped me a lot already over the past three months. You are really good at
348 teaching people stuff without them really noticing. You are not patronising or
349 telling me what to do. So far, I have never once felt undermined by you. You do it
350 really subtle and step by step. You make suggestions but you don't tell me. You
351 put ideas in my head and I then think I have come up with these ideas myself. It's
352 really good, especially for big egos like mine. You did not come in being like 'I
353 know so much and you don't', not at all. You are very personal and friendly. I am
354 excited for the rest of our time together.

355 In sum, these findings outline that the researcher's personality and background perhaps
356 accelerated the establishment of rapport between herself, the athletes, and coach.

357 **Athletes' psychological needs – focus and emotional control.** Interview data revealed
358 that parents and the coach were aware of the important role PSCs played during youth athletes'
359 development. John (P₅) explained: "I think to fulfil your potential in any given field of life, but
360 particularly in sport, you need to manage the mental process as well as the physical ones." The
361 coach reinforced this point: "They all hit well at the top level, it comes down to having the
362 mental capacity to succeed." Together, participants deemed a host of PSCs as fundamental for
363 athletes' positive development: "It is stuff like motivation, hard-work, being confident and
364 focused, bouncing back from failure, staying positive by having positive imagery and self-talk."
365 (Leanne, P₁₅). Nevertheless, a combination of observational data and interviews revealed that
366 athletes struggled in particular with their focus and emotional control: "Staying focused is a real
367 problem for him. Sometimes he is ahead 4-1 and then gives it away because he is not with it."
368 (Michael, P₁₀). Similarly, Jeremy (P₁₂) reported: "He loses it sometimes, gets angry, throws his
369 racket. Can't control his emotions. He loses matches because of that, even if he is the better
370 player." Observations and informal conversations with the athletes aligned with these reports:

371 Freddie (A1) is really not with it today. He is sitting on his racket, not offering
372 balls to his opponents, chatting to his buddy Tom (A1) who is playing on another
373 court, and making easy mistakes. He appears bored; when this happens his focus
374 always vanishes. (*Field note, 18-11-2015*)

375 Andy (A2) played incredible today. He was 5:2 up against the player regarded
376 the best of the group. He served for the win, but double faulted twice. He got so
377 worked up about it that he lost the set 5:7. He marched over to my bench and
378 said: "I ALWAYS do this! I am playing out of this world, then, instead of

379 concentrating on the next point, I start thinking about winning and completely
380 lose focus. Then I make stupid mistakes and get so angry with myself that
381 nothing works anymore.” (*Field note 03-12-2015*)

382 Mark (P₇) and Jessica (P₆) explained that the loss of focus and emotional control was
383 significantly influenced by their children’s perceptions of success and failure:

384 There are often tears after or even during a match when my son is about to lose.
385 Even if he is playing really well. Then he loses his focus, gets upset. He doesn’t
386 seem to understand that it is not always about winning. (Mark, P₇)

387 I caught Tom lying about who he had beaten at tennis. We had a big discussion
388 about it. Turns out that he thought that if he wins I would love him more. I just
389 said ‘For goodness sake, I love you if you lose everything! [participant cries] All I
390 want is for you to be happy. I could not love you any more or less.’ He really did
391 for a while think that it mattered to me if he won. (Jessica, P₆)

392 Despite the loss of focus and emotional control being a common issue, parents and the
393 coach felt ill equipped to help athletes regulate these psychological characteristics:

394 After repeatedly shouting ‘focus focus’ at the athletes, the coach turned around
395 to me and said ‘All I really do is tell them to focus. But if I just tell them to
396 focus, it is very hollow, nothing much behind what I am actually saying. The
397 information I am giving to them should be deeper. I am not actually telling them
398 how to focus or refocus. I should be giving them strategies that help them to do
399 it. But I just don’t know these.’ (*Field note, 25-11-2015*)

400 Parents experienced similar feelings, as evidenced by the following quotes:

401 I’m hoping to go away from this [interview] with a better understanding of how
402 to better coach my 8-year-old son with the stress and strain of playing tennis. So

403 far I have found it very stressful and he has found it stressful. I would like to help
404 him control his emotions, but I don't feel like I can. I don't feel like I have
405 enough knowledge to really help him through that time. (John, P₅)

406 My son is prone to looking at all the things that have gone wrong rather than
407 concentrating on the things that have gone well. I have talked to him about it.
408 Said that it is not good and that he should stay positive instead. But that's all I
409 can really do. Talk to him about it. I can't teach him strategies that would make it
410 easier. I don't know them. I can just share my experience with him. (Maria, P₉)

411 It is possible that the cause of these feelings was a perceived lack of education and training that
412 taught parents how to support athletes' psychological development. Along the same line, the
413 coach explained: "Coach education workshops don't really teach you how to teach kids to
414 control their emotions. They touch on it, maybe talk about it, but don't show you how to do it.
415 And the parents, they don't get any education on this kind of stuff." Participants therefore
416 believed that it was the responsibility of "someone more qualified" (Kaitlin, P₁₁) to develop
417 athletes' PSCs.

418 Taking all information into consideration, a MST program was designed to strengthen
419 athletes' focus and emotional control. All of the athletes were exposed to the same workshops
420 despite their age differences. During the workshops, younger athletes were 'buddied' with older
421 athletes to support each other's learning.

422 **Intervention Phase: A Mental Skills Training Program for Youth Tennis Players**

423 The MST program consisted of three interactive classroom and on-court workshops.
424 These were delivered at three different time points over a two-month period to all 11 athletes and
425 their coach. A deliberate decision was made to deliver the workshops to all athletes at the same
426 time despite their age differences. First, athletes frequently trained together as their tennis skills

427 were similar. Second, none of the athletes had a prior understanding of sport psychology. Finally,
428 the positive interrelationship between the groups was used to avoid potential insecurities about
429 spelling and grammar in the younger athletes. To do so a “buddy system” was established in
430 which younger athletes were paired with older athletes to provide support during the workshops
431 if needed. Each workshop was divided into 1.5 hours of classroom-based education (see Table 1
432 for a detailed overview), a 30-minute lunch break, and 2 hours of on-court tennis specific mental
433 skills drills. The first two classroom sessions consisted of the first author educating the athletes
434 and their coach about the psychological characteristics focus and emotional control. In addition,
435 athletes’ knowledge of psychological skills that regulate or facilitate athletes’ ability to focus and
436 control their emotions (i.e., self-talk, imagery, and performance routines) was strengthened. The
437 final classroom session addressed athletes’ perceptions of success and failure and offered athletes
438 an additional opportunity to reflect upon and practice their psychological skills self-talk and
439 performance routines. Complex psychological topics were explained through the use of pictures,
440 stories, videos, and terminology athletes were familiar with. For instance, images of spotlight
441 beams were used to explain the difference between internal and external focus. Moreover, clips
442 of athletes’ favourite tennis players or films, such as “Kicking and Screaming”, were shown to
443 outline good and bad examples of maintaining and regaining focus. Athletes were actively
444 engaged in individual or group tasks such as discussions, workbook tasks, or case-study
445 activities after every 5-10 minutes of content delivery. For example, one of the workbook tasks
446 required athletes to identify factors that commonly distracted them, as well as those that helped
447 them regain or maintain focus. These strategies were shared and discussed with the group and
448 practiced after lunch, when the coach and first author engaged athletes in tennis specific mental
449 skills drills that were informed by Lauer, Gould, Lubbers, and Kovacs’ (2010) handbook. The
450 researcher used this book to identify drills that tested athletes’ ability to focus and control their

451 emotions and aligned with the psychological skills that had been taught prior to the on-court
452 sessions.

453 **Evaluation Phase: What and How Did Athletes Learn?**

454 This section presents what and how athletes learned about the PSCs targeted in the MST
455 program. Data was collected through a semi-structured interview with the coach and post-
456 intervention observations that were conducted over a four-month period and included informal
457 chats with athletes, their parents, and the coach. The section is framed using the themes that
458 emerged from the data analysis of the evaluation phase. In relation to what athletes learned, these
459 themes are: an *enhanced understanding of psychological skills and characteristics*, an *increased*
460 *use of psychological skills*, and the development of *a shared subject specific language*. In terms
461 of how athletes learned, information can be found in the theme called *the importance of the pre-*
462 *intervention phase*. All four themes are explained below and data illustrated for each theme.

463 **An enhanced understanding of psychological skills and characteristics.** Athletes
464 reported that the program enhanced their understanding of focus and emotional control. More
465 specifically, they explained that prior to the MST program they were unaware that they could
466 control their emotions and focus:

467 I knew that getting angry during games wasn't good. My coach and parents tell
468 me all the time to 'stop getting in a mood'. I tried, but it never really worked. I
469 didn't really feel like I could control it. But your talks showed me that I can
470 control it, I just need to practice your tips and eventually I will get it. (Josh, A2,
471 *Field note 12-05-2016*)

472 Additionally, Nick (A2) explained:

473 I have always talked to myself during games and sometimes training, but I never
474 knew that others do that too and that bad self-talk is bad for my focus. Because

475 when I get angry and use bad self-talk, I don't focus on my tennis, I focus on the
476 things that make me angry. (*Field note 12-05-2016*)

477 Similarly, Dave (A2) stated:

478 I have been doing a serve routine my whole life. My coach and dad told me to do
479 it. But I didn't know that it was **that** important, that it helps me to focus so that I
480 get more serves in. (*Field note 12-05-2016*)

481 Athletes further reinforced this point by reporting that, prior to the workshops, they did not
482 know that the behaviours they so frequently engaged in, such as self-talk or imagery, "were
483 psychological things" (Gary, A2, *Field note 27-04-2016*) that influenced their focus and
484 emotional control. A cause for this lack of understanding could be that athletes' immediate
485 others, such as their coach and parents, also possessed a limited understanding of psychological
486 skills. The coach explained:

487 Until you arrived I didn't think that it [(pre-) performance routine] was a
488 psychological skill. I did it to help them [the athletes] improve their technique
489 because I noticed that they rushed. So performance routines were technically
490 based in my eyes, now I realize that they actually help the athletes to focus.

491 Athletes' newly gained understanding about PSCs appeared to enhance their ability and
492 willingness to regulate their psychological characteristics more consistently:

493 I noticed that athletes engage much more frequently in their serve routines now.
494 When asking Andy (A2) why this was the case, he replied 'After your talks, I
495 realized that the serve routine really helps me to focus and block everything else
496 out before I serve. So now, I just focus on the ball and my dribbling. Nothing else.
497 It makes a real difference to my serve. (*Field note 25-05-2016*)

498 **An increased use of psychological skills.** Athletes' use of psychological skills increased
499 as a result of athletes' enhanced understanding of PSCs. Tom (A1) stated: "I now know that I can
500 control my mind with some of the tricks we learned, like talking to myself positively. I now try
501 to say good things in my head rather than bad things that upset me" (*Field note 11-05-2016*).

502 Similarly, Andy (A2) explained:

503 Instead of doing my serve routine sometimes, I now do it all the time. I now know
504 why I should be doing it and that it is important for the consistency of my serve. I
505 was told to do it before and have seen world-ranked players do it too, so it was
506 just something I did without really thinking about it. Now I know that it makes me
507 better, so I want to do it more often. (*Field note 25-05-2016*)

508 Athletes increased use of psychological skills was also noticed by the coach:

509 It is like they [the athletes] are transformed. Before the workshops, especially
510 with the younger ones, I had to walk around and say 'remember your serve
511 routines, remember your serve routines'. I had to remind them all the time. And
512 now, every single one of them is doing it every single time!

513 In addition, parents reported that athletes transferred their use of psychological skills from
514 training into tournament situations, Stephen (P₈) reported:

515 Freddie (A1), my younger one, he is definitely a bit more focused when we go to
516 tournaments now. He double-faults less. I think it's because he finally engages in
517 his serve routine consistently. I have been telling him for years, but I think it took
518 the workshops for him to understand why I want him to do it. And my older one,
519 less jabbering, much more fist pumps and positive chat. He still has a long way to
520 go, but I can see him getting there. His attitude is better.

521 **The development of a shared subject specific language.** Finally, it was observed and
522 reported that the MST program facilitated a shared subject specific language between the athletes
523 and their coach. This helped the individuals to communicate more effectively with each other:

524 Another good thing is that you have created a shared language between us. You
525 helped to expand my vocabulary, but also the one of the athletes. I used to tell the
526 kids before they went off to play points to work hard, because I knew they
527 understood what I meant with that. But I never gave more detailed information.
528 Now I don't just tell them to work hard, but also to focus, use their routines, and
529 shut off their negative self-talk. It makes a massive difference. (Coach)

530 Moreover, athletes reported to talk more openly about psychological skills since engaging in the
531 program. Andy (A2) explained: "I sometimes struggle to stay positive, so I asked Dave (A2)
532 what he tells himself because he is always so positive. That helped me to make my negative
533 thoughts more positive" (*Field note 09-06-2016*). The increased communication about
534 psychological skills was also noticed in the younger athletes as this field note exemplifies:

535 The athletes practiced doubles today. After Will (A1) double faulted for the
536 second time, his doubles partner Freddie (A1) turned around from the net and said
537 'Come on Will, try to use your imagery before you serve again. That will help
538 you to get it in. I do it all the time.' (*Field note 19-05-2016*)

539 Taken together, the findings suggest that the MST program triggered several positive
540 outcomes for the youth athletes, including an enhanced understanding and use of PSCs, as well
541 as a shared subject specific language. In addition, athletes reported enjoying the MST program
542 despite smaller issues, such as a dislike for having to handwrite information into the program
543 workbooks. Additional qualitative data was collected to identify how these positive outcomes
544 were able to be elicited. The results are presented in the following section.

545 **The importance of the pre-intervention phase.** Participants consistently outlined that
546 the pre-intervention phase allowed for the establishment of rapport and, subsequently,
547 meaningful content and delivery mediums. More specifically, investing the time to get to know
548 athletes and their coach prior to the commencement of the MST program was perceived as a
549 fundamental asset of the program's success. The coach reflected: "Wasn't it funny how quiet and
550 red the boys went when you first started here and now they won't shut up and ask a million times
551 where you are when you are not here." After overcoming athletes' initial shyness, the researcher
552 was able to get to know the athletes and develop a foundation that would inform the MST
553 program. The coach stated: "It really paid off that you stuck with us for so long, you are like part
554 of the team now, and that's why we liked listening to you and why the boys got as involved [in
555 the program] as they did."

556 In addition, listening to and observing the athletes, their coach and parents over a
557 prolonged period of time allowed the researcher to develop meaningful content and delivery
558 mediums. In particular, the researcher was able to learn about athletes' interests, such as their
559 favourite players, and explore their understanding of sport psychology:

560 My biggest worry was you have Jordan who is 8 years old and Andy who is 15,
561 and would Jordan even ever know what all these words are? But the way you
562 explained it, they could all do it and relate to it, cos you used examples from when
563 you were here with us. (Coach)

564 Piper (P₁), the mother of the youngest athlete, agreed with this contention:

565 From what he said, I got the impression that he could relate to what you were
566 saying because he has felt it. Those issues you discussed, he had experienced
567 them and hadn't quite known how to deal with them, so what he could do was

568 thinking ‘Oh yeah, I have been there’. Which is good, cos that made him realize
569 that such feelings are normal and showed him that you can manage them.
570 In addition to being able to relate to the program, athletes stated that “the workshops were really
571 good fun. I liked all the photos and the videos you showed us of our favourite players” (Tom,
572 A1, *Field note 10-02-2016*).

573 Finally, the coach and athletes perceived that the workshops were “pitched at the right
574 level” (coach), because “you used words we knew, and taught us about stuff we were already
575 doing, but actually explained them” (Andy, A2, *Field note 10-02-2016*). Together, it appears
576 that the time spent in the researched environment prior to the intervention allowed the
577 researcher to learn and adapt to athletes’ jargon and build upon already existing knowledge and
578 behaviours.

579 Discussion

580 The purpose of the present study was to develop, implement, and evaluate a MST
581 program for elite youth tennis players that was informed by athletes’ psychological needs and
582 personal interests. Results indicated that the program successfully taught athletes about focus and
583 emotional control, as well as psychological skills that helped athletes to regulate these
584 characteristics. Consequently, the findings correspond to previous MST programs for youth
585 athletes that also found the benefits of equipping youth athletes with PSCs to deal with the
586 challenges and stressors of elite sport (e.g., Fortes et al., 2018; Sharp et al., 2013). Nevertheless,
587 the steps taken to develop, implement, and evaluate the current MST program were unique and
588 extend the literature in several ways.

589 The current MST program was informed by critical realism and action research
590 principles, placing significant importance on the researcher’s prolonged immersion in the
591 intervention setting to allow for an enriched assessment of athletes’ needs and interests, the

592 development of rapport, and an in-depth understanding of the environment in which athletes
593 were embedded (McNiff, 2013; Pawson & Tilley, 1997). Although action research is widely
594 used in education- and health-related fields (e.g., Campbell & Filimon, 2018; Lenthall et al.,
595 2018) and experts have outlined the value of researchers' prolonged immersion in intervention
596 settings (e.g., Henriksen et al., 2014; Visek et al., 2009), research investigating youth athletes'
597 psychological development has been much slower to implement its guiding principles. A
598 common reason for the lack of researchers' prolonged immersion appears to be the limited time
599 they are afforded in these settings prior to the implementation of MST programs (Harwood &
600 Steptoe, 2013). Experts suggested that this may be due to the stigma that sport psychology
601 services can "quick fix" athletes' problems (MacNamara & Collins, 2013; Pain & Harwood,
602 2004). This is unfortunate since many researchers have advocated that youth athletes'
603 psychological development should be personalized, proactive, and embedded systematically into
604 athletes' everyday practices (e.g., Côté et al., 2010; MacNamara et al., 2010). To follow these
605 guidelines, it is essential that researchers establish an in-depth familiarization with athletes'
606 personalities, habits, needs, and interests, as well as the setting in which the MST program is to
607 take place (e.g., Gardner & Moore, 2005; Henriksen et al., 2014). In line with these objectives,
608 the lead researcher of the current study spent nine months in the researched youth sport setting
609 prior to the creation of the MST program. Spending this significant amount of time at the tennis
610 club allowed the researcher to establish rapport with all participants to a degree that she was
611 considered part of the environment. In addition to the considerable time spent at the club, it is
612 believed that the researcher's personality, background, and educational approach accelerated the
613 rapport building process. For instance, it was reported that the researcher's hands-on
614 involvement in training sessions fostered athletes' acceptance of her and that her understanding
615 of competitive youth tennis enhanced the relevance of examples used during the MST program.

616 In addition to placing significant importance on the researcher's prolonged immersion in
617 the intervention setting, results showed that athletes' use and regulation of PSCs improved after
618 the MST program. For instance, athletes consistently engaged in serve routines and consciously
619 replaced their negative with positive self-talk following the MST. To understand athletes' change
620 in behaviour, it is possible to refer to Michie, Stralen, and West's (2011) COM-B model. The
621 model consists of four components, including behaviours, capability, opportunity, and
622 motivation, and recognizes that the latter three components shape individuals' intention to
623 engage in behaviours. Consequently, for behaviour change to occur, one or more of the three
624 components need to be manipulated. Specifically, the motivation to engage in a behaviour is said
625 to increase if individuals have the opportunity (i.e., factors that lie outside of individuals' control
626 that make the behaviour possible or prompt it) and capability (i.e., individuals' psychological and
627 physical capacity to engage in an activity, including having the necessary knowledge and skills)
628 to engage in the behaviour. This supports the interpretation of the current results, outlining that
629 youth athletes' motivation to use and regulate PSCs consistently can indeed increase as a cause
630 of athletes' enhanced understanding of PSCs. Although this finding is in line with various youth
631 sport development frameworks such as the Mastery Approach to Coaching (Smith & Smoll,
632 2002), Positive Youth Development in Sport (Côté, et al., 2010), and the Life Skills Promotion
633 Model (Gould & Carson, 2008), the COM-B Model has received little attention in the youth
634 athlete developmental literature. Based on the current findings, it appears that the theory can be
635 applied to the youth sport context and supports the notion that athletes should be offered explicit
636 opportunities, such as education, modelling, and training, to develop the necessary capabilities,
637 to be increasingly motivated and able to regulate their focus and emotions. While the present
638 study was not designed to measure athletes' capability to use PSCs or evaluate the opportunities
639 they are afforded to develop and practice PSCs before and after the MST program, it would be

640 interesting for future research to investigate the usefulness of behaviour change theories to
641 increase youth athletes' effective use of PSCs.

642 The COM-B model can also be used to explain parents and the coach's calls for more
643 accessible and appropriate educational opportunities designed to educate them about youth
644 athletes' effective psychological development. Specifically, participants reported that their
645 motivation and confidence to support youth athletes' psychological development would increase
646 if their capability to do so was fostered. While the present study was not designed to delve
647 deeper into the educational needs of parents and coaches, future research should aim to work
648 collaboratively with these individuals to ensure that the delivery of educational opportunities is
649 appropriately adapted to the ever-evolving needs of this audience (Gould, 2016). It is appreciated
650 that this idea does not come without challenges. Specifically, when looking at the provision of
651 educational opportunities from a broader or policy perspective, it is worth noting that a
652 discrepancy between regulations reinforced by some sport organizations and recommendations
653 made within the youth sport literature can exist (cf. Pankhurst, Collins, & MacNamara, 2012).
654 This might hinder or decelerate the appropriate education of athletes, parents, and coaches
655 (Gould, 2016). Subsequently, more efforts are required that foster a dedicated and mutually
656 beneficial collaboration between researchers, sport psychology practitioners, and sport
657 organizations that has the potential to enhance the likelihood of positive youth development in
658 the real world. To achieve such collaboration, researchers are encouraged to shift their focus
659 from sole knowledge acquisition to a combination of knowledge acquisition, transfer, and
660 dissemination (Gould, 2016).

661 Finally, after developing athletes and the coach's capability to use subject specific
662 terminology, participants reported feeling more confident to talk openly, frequently, and
663 explicitly about PSCs. Previous research by Richards, Collins, and Mascarenhas (2012) gleaned

664 similar results when exploring the complexity of decision-making in elite netball. Their findings
665 outlined that athletes' feelings of connectivity and relatedness increased after clarifying the
666 language that players and coaches used throughout training and competitions. Together, this is an
667 important lesson for future youth athlete and coach interventions, as it outlines the importance of
668 clarifying context specific vocabulary to facilitate effective communication with and between
669 participants. It would be premature to assume that the facilitation of a shared subject specific
670 language normalized the use of PSCs within the researched environment, yet future research
671 should explore this contention.

672 **Limitations and Future Research Directions**

673 Although the present study offered some practical results, limitations need to be
674 considered. First, the MST program was informed and evaluated solely through qualitative
675 research methods, which limits the generalizability of the results. In addition, no performance
676 data was collected that could provide further indication about the success of the intervention. To
677 benefit from the advantages of both qualitative and quantitative research methods, future
678 research should consider adopting a mixed method approach. Second, all participants took part in
679 a MST program that was informed by a nine-month pre-intervention phase. Therefore, it is not
680 possible to identify if similar results could have been achieved through a shorter or even longer
681 pre-intervention phase. Finally, while parents informed the current MST program, they did not
682 partake in the program to learn about PSCs themselves. To further the long-term positive effects
683 of youth athletes' MST programs, future interventions should aim to offer educational programs
684 to coaches and parents that complement athletes' MST programs (Henriksen et al., 2014).

685 **Conclusion**

686 The present study is among the first to implement a longitudinal action research study
687 that aimed to develop, implement, and evaluate a MST program informed by youth athletes'

688 needs and interests. Results outlined the benefits of researchers' prolonged immersion in the
689 intervention setting, allowing for the development of authentic relationships with athletes and
690 their supportive others prior to the development and implementation of a MST program. More
691 specifically, the results showed that athletes' regulation of the psychological characteristics of
692 focus and emotional control improved due to athletes' enhanced understanding of and ability to
693 use psychological skills, such as positive self-talk and serve routines. Overall, this supports the
694 notion that youth athletes should be offered explicit educational opportunities to develop the
695 necessary capabilities to regulate psychological characteristics early on in their development.
696 Practical guidelines for future sport psychology interventions with youth athletes and their
697 supportive others are provided with the ultimate goal of enhancing athletes' chances of fulfilling
698 their athletic and personal potential.

699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722

References

- Braun, V., & Clarke, V. (2013). *Successful qualitative research: A practical guide for beginners*. London: Sage.
- Barker, J., McCarthy, P., & Harwood, C. (2011). Reflections on consulting in elite youth male English cricket and soccer academies. *Sport and Exercise Psychology Review*, 7, 58-72.
- Campbell, Y. C., & Filimon, C. (2018). Supporting the argumentative writing of students in linguistically diverse classrooms: An action research study. *Research in Middle Level Education Online*, 41, 1-10. doi: 10.1080/19404476.2017.1402408
- Carr, W., & Kemmis, S. (1988). *Becoming critical*. East Sussex: Falmer Press.
- Côté, J., Bruner, M., Erickson, K., Strachan, L., & Fraser-Thomas, J. (2010). Athlete development and coaching. In J. Lyle & C. Cushion (Eds.), *Sports coaching: Professionalization and practice* (pp. 63-84). London: Elsevier.
- Côté, J., Lidor, R., & Hackfort, D. (2009). ISSP Position Stand: To sample or to specialize? Seven postulates about youth sport activities that lead to continued participation and elite performance. *International Journal of Sport and Exercise Psychology*, 7, 7-17. doi:10.1080/1612197X.2009.9671889
- Dohme, L.-C., Backhouse, S., Piggott, D., & Morgan, G. (2017). Categorizing and defining popular psychological terms used within the youth athlete talent development literature: a systematic review. *International Review of Sport and Exercise Psychology*, 10, 134-163. doi:10.1080/1750984X.2016.1185451
- Evans, L., Hardy, L., & Fleming, S. (2000). Intervention strategies with injured athletes: An action research study. *The Sport Psychologist*, 14, 188-206. doi: 10.1123/tsp.14.2.188
- Fortes, L. S., Freitas-Júnior, C. J., Paes, P. P., Vieira, L. F., Nascimento-Júnior, J. R. A, Araújo Lima-Júnior, D. R. A., & Ferreira, M. E. C. (2018). Effect of an eight-week imagery

- 723 training programme on passing decision-making of young volleyball players.
724 *International Journal of Sport and Exercise Psychology*, 6, 1-9.
725 doi:10.1080/1612197X.2018.1462229
- 726 Foster, D., Maynard, I., Butt, J., & Hays, K. (2016). Delivery of psychological skills training to
727 youngsters. *Journal of Applied Sport Psychology*, 28, 62-77.
728 doi:10.1080/10413200.2015.1063097
- 729 Fournier, J. F., Calmels, C., Durand-Bush, N., & Salmela, J. H. (2005). Effects of a season-long
730 PST program on gymnastic performance and on psychological skill development.
731 *International Journal of Sport and Exercise Psychology*, 3, 59-78.
732 doi:10.1080/1612197X.2005.9671758
- 733 Gardner, F. L., & Moore, Z. E. (2005). Using a case formulation approach in sport psychology
734 consulting. *The Sport Psychologist*, 19, 430-445. doi:10.1123/tsp.19.4.430
- 735 Gould, D. (2016). Conducting sport and exercise science research that counts: The forgotten role
736 of knowledge integration and dissemination. *International Sport Coaching Journal*, 3,
737 197-203. doi:10.1123/iscj.2015-0113
- 738 Gould, D., & Carson, S. (2008). Life skills development through sport: Current status and future
739 directions. *International Review of Sport and Exercise Psychology*, 1, 58-78.
740 doi:10.1080/17509840701834573
- 741 Gould, D., & Maynard, I. (2009). Psychological preparation for the Olympic Games. *Journal of*
742 *Sport Sciences*, 27, 1393-1408. doi:10.1080/02640410903081845
- 743 Gould, D., & Nalepa, J. (2016). Mental development in the young athlete. In A. C. Colvin, & J.
744 N. Gladstone (Eds.), *The young tennis player: Injury prevention and treatment* (pp. 37-
745 53). New York: Springer.

- 746 Hardy, L., Barlow, M., Evans, L., Rees, T., Woodman, T., & Warr, C. (2017). Great British
747 medallists: Psychosocial biographies of super-elite and elite athletes from Olympic
748 sports. *Progress in Brain Research*, 232, 1-119. doi:10.1016/bs.pbr.2017.03.004
- 749 Harwood, C., & Steptoe, K. (2013). The integration of single case designs in coaching contexts:
750 A commentary for applied sport psychologists. *Journal of Applied Sport Psychology*, 25,
751 167-174. doi:10.1080/10413200.2012.690361
- 752 Henriksen, K., Larsen, C. H., Storm, L. K., & Ryom, K. (2014). Sport psychology interventions
753 with young athletes: The perspective of the sport psychology practitioner. *Journal of*
754 *Clinical Sport Psychology*, 8, 245-260. doi:10.1123/jcsp.2014-0033
- 755 Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Holistic approach to talent
756 development environments: A successful sailing milieu. *Psychology of Sport and*
757 *Exercise*, 11, 212-222. doi:10.1016/j.psychsport.2009.10.005
- 758 Howells, K. (2017). Butterflies, magic carpets, and scary wild animals: An intervention with a
759 young gymnast. *Case Studies in Sport and Exercise Psychology*, 1, 26-37.
760 doi:10.1123/cssep.2016-0006
- 761 Kemmis, S., & McTaggart, R. (1988). *The action research planner* (3rd ed.). Victoria: Deakin
762 University Press.
- 763 Kipp, L. (2018). Developmental considerations for working with young athletes. In K. J. Knight,
764 C. G. Harwood, & D. Gould (eds.), *Sport psychology for young athletes* (pp. 32-42).
765 London: Routledge.
- 766 Larsen, C., Alfermann, D., & Christensen, M. K. (2012). Psychological skills in a youth soccer
767 academy: A holistic ecological perspective. *Sport Science Review*, 11, 51-74.
768 doi:10.2478/v10237-012-0010-x

- 769 Lauer, L., Gould, D., Lubbers, P., & Kovacs, M. (2010). *USTA mental skills and drills*
770 *handbook*. Monterey, CA: Coaches Choice.
- 771 Lenthall, S., Wakerman, J., Dollard, M. F., Dunn, S., Knight, S., Opie, T., ... & MacLeod, M.
772 (2018). Reducing occupational stress among registered nurses in very remote Australia:
773 A participatory action research approach. *Collegian, 25*, 181-191.
774 doi:10.1016/j.colegn.2017.04.007
- 775 Mace, R. (1990). Cognitive behavioral interventions in sport. In J. G. Jones & L. Hardy (eds.),
776 *Stress and performance in sport* (pp. 203-230). Chichester: Wiley.
- 777 MacNamara, A., & Collins, D. (2013). Do mental skills make champions? Examining the
778 discriminant function of the psychological characteristics of developing excellence
779 questionnaire. *Journal of Sports Sciences, 31*, 736-744.
780 doi:10.1080/02640414.2012.747692
- 781 MacNamara, A., Button, A., & Collins, D. (2010). The role of psychological characteristics in
782 facilitating the pathway to elite performance Part 2: Examining environmental and stage-
783 related differences in skills and behaviors. *The Sport Psychologist, 24*, 74-96.
784 doi:10.1123/tsp.24.1.74
- 785 McCarthy, P. J., Jones, M. V., Harwood, C. G., & Olivier, S. (2010). What do young athletes
786 implicitly understand about psychological skills? *Journal of Clinical Sport Psychology, 4*,
787 158-172. doi:10.1123/jcsp.4.2.158
- 788 McNiff, J. (2013). *Action research - Principles and practice* (3rd ed.). London: Routledge.
- 789 Michie, S., Stralen, M. M., & West, R. (2011). The behavior change wheel: A new method for
790 characterizing and designing behavior change interventions. *Implementation Science, 6*,
791 42-53. doi:10.1186/1748-5908-6-42

- 792 Ong, N. C. H., & Griva, K. (2017). The effect of mental skills training on competitive anxiety in
793 schoolboy rugby players. *International Journal of Sport and Exercise Psychology*, *15*,
794 475-487. doi:10.1080/1612197X.2016.1153129
- 795 Pain, M. A., & Harwood, C. G. (2004). Knowledge and perceptions of sport psychology within
796 English soccer. *Journal of Sports Sciences*, *22*, 813-826.
797 doi.org/10.1080/02640410410001716670
- 798 Pankhurst, A., Collins, D., & MacNamara, A. (2012). Talent development: Linking the
799 stakeholders to the process. *Journal of Sports Sciences*, *1*, 1-11.
800 doi:10.1080/02640414.2012.733821
- 801 Pawson, R., & Tilley, N. (1997). *Realist evaluation*. London: Sage.
- 802 Pierce, S., Kendellen, K., Camiré, M., & Gould, D. (2018). Strategies for coaching for life skills
803 transfer. *Journal of Sport Psychology in Action*, *9*, 11-20.
804 doi:10.1080/21520704.2016.1263982
- 805 Richards, P., Collins, D., & Mascarenhas, D. R. D. (2012). Developing rapid high-pressure team
806 decision-making skills. The integration of slow deliberate reflective learning within the
807 competitive performance environment: A case study of elite netball. *Reflective Practice*,
808 *13*, 407-424. doi:10.1080/14623943.2012.670111
- 809 Sharp, L.-A., Woodcock, C., Holland, M. J. G., Cumming, J., & Duda, J. L. (2013). Qualitative
810 evaluation of the effectiveness of a mental skills training program for youth athletes. *The*
811 *Sport Psychologist*, *27*, 219-232. doi:10.1123/tsp.27.3.219
- 812 Smith, B., & McGannon, K. (2018). Developing rigor in qualitative research: Problems and
813 opportunities within sport and exercise psychology. *International Review of Sport and*
814 *Exercise Psychology*, *11*, 101-121. doi:10.1080/1750984X.2017.1317357

- 815 Smith, R. E., & Smoll, F. L. (2002). *Way to go, coach!: A scientifically-proven approach to*
816 *youth sports coaching effectiveness*. Portola Valley, CA: Warde Publishers.
- 817 Sparkes, A., & Smith, B. (2014). *Qualitative research methods in sport, exercise and health:*
818 *From process to product*. Cambridge: Routledge.
- 819 Visek, A. J., Harris, B. S., & Blom, L. C. (2009). Doing sport psychology: A youth sport
820 consulting model for practitioners. *The Sport Psychologist, 23*, 271–291.
821 doi:10.1123/tsp.23.2.271
- 822 Vealey, R.S. (1988). Future directions in psychological skills training. *The Sport Psychologist, 2*,
823 318-336. doi:10.1123/tsp.2.4.318

Table 1

Classroom based Sport Psychology Education Program

Workshop Number & Name	Workshop Content	Min.
<p>Workshop # 1: Improving your Focus</p>	<p>1. Introduction to focus</p> <p>2. Task 1: Identify critical moments in tennis. Task 2: Identify the cues that one should focus on in these situations. Task 3: Identify reasons for losing focus.</p> <p style="text-align: center;">Break</p> <p>3. Introduction to learning to achieve, maintain and gain back focus</p> <p><u>Teaching of psychological skills & tasks:</u></p> <ul style="list-style-type: none"> • (Pre-) Performance Routine • Concentration Cues • Error Parking 	<p>10</p> <p>25</p> <p style="text-align: center;">↓</p> <p>5</p> <p>5</p> <p>25</p> <p>10</p> <p>10</p>
<p>Workshop # 2: Learning to control your emotions</p>	<p>1. Introduction to emotional control</p> <p>2. Task 1: Is emotional control something that positively or negative impacts on our performance? Task 2: Identify your ideal set and level of emotion that makes your performance great. Task 3: Identify where your emotions come from.</p> <p style="text-align: center;">Break</p> <p>3. Introduction to learning how to control your emotions</p> <p><u>Teaching of psychological skills & tasks:</u></p> <ul style="list-style-type: none"> • Self-Talk • Imagery 	<p>10</p> <p>25</p> <p style="text-align: center;">↓</p> <p>5</p> <p>5</p> <p>25</p> <p>20</p>
<p>Workshop # 3: What does success and failure mean to you?</p>	<p>1. Introduction to winning and losing</p> <p>2. Task 1: What do the words success and failure mean to you? Task 2: Identify forms of success.</p> <p style="text-align: center;">Break</p> <p>3. Introduction to learning how to accept mistakes and fear</p> <p><u>Teaching of psychological skills & tasks:</u></p> <ul style="list-style-type: none"> • Self-Talk • Performance Routines <p>4. Task 3: Developing a philosophy of success for players at the Academy</p>	<p>10</p> <p>10</p> <p>10</p> <p>5</p> <p>5</p> <p>15</p> <p>15</p> <p>30</p>