Please cite as:

Lemelin, E., Kil, H., Petit, É, Carpentier, J., Forest, J., Gadoury, S., Richard, J-P., Joussemet, M., & Mageau, G. A. (2023). How to support athlete autonomy in university sports: Coaches' experience of the reROOT program. The Sport Psychologist. https://doi.org/10.1123/tsp.2022-0124

How to Support Athlete Autonomy in University Sports: Coaches' Experience of the *reROOT* Program

Emilie Lemelin[1], Hali Kil[2], Élodie Petit[1], Joëlle Carpentier[3], Jacques Forest[3], Sophie Gadoury[4], Jean-Paul Richard[5], Mireille Joussemet[1] & Geneviève A. Mageau[1]

[1]Departement of psychology, Université de Montréal
[2]Department of Psychology, Simon Fraser University
[3]Department of organization and human resources, Université du Québec à Montréal
[4]nimble bubble
[5]TANGIBLE performance

Author Note

Correspondence concerning this article should be addressed to Emilie Lemelin, Email: emilie.lemelin@umontreal.ca

The first, second, third and eighth authors have no current conflict of interest to declare. The fourth, fifth, sixth, seventh and last authors benefit financially from the reROOT program, either to deliver the program and/or for having created it (https://rerootcollectif.com), although delivery of the program for the present study was pro bono. No program material is currently available for purchase.

Abstract

The purpose of this study was to evaluate coaches' experience of the *reROOT* program, a program aiming to increase coaches' autonomy-supportive skills, structure, and involvement. We delivered the program to 32 university sports coaches, and of these coaches, 13 participated in three semi-structured focus groups two weeks post-program and discussed their experience of the program. Guiding questions aimed at assessing participants' responsiveness to the program and its perceived usefulness. Classical content analyses were performed, organized based on the guiding questions when applicable. Results suggest that coaches appreciated the program, believed that they could implement its skills in their day-to-day coaching, and observed positive impacts on themselves and their athletes despite the COVID-19 pandemic. It thus appears that coaches are responsive to the *reROOT* program and that it could be a useful part of coaches' training.

Keywords: Autonomy support, coaching skills, intervention, *reROOT* program, Self-Determination Theory

How to Support Athlete Autonomy in University Sports: Coaches' Experience of the *reROOT* Program

In sports contexts, effective coaching includes sport-specific knowledge and competencies as well as interpersonal and intrapersonal ones (Côté & Gilbert, 2009). However, the majority of coach training programs only focuses on sport-specific knowledge (Lefebvre et al., 2016). Given that controlling behaviors such as orders, criticisms, and threats can have adverse consequences on athletes such as reduced motivation and well-being (Bartholomew et al., 2009), it is important to help coaches rely on more positive interpersonal skills. Research anchored in Self-Determination Theory (SDT) has identified positive interpersonal coaching behaviors (i.e., autonomy support [AS], structure, and involvement) that can be taught to effectively promote athletes' autonomous motivation, performance, and psychological adjustment (e.g., Cheon et al., 2015; Lemelin et al., 2022; Mageau & Vallerand, 2003). The *reROOT* program includes these alternative behaviors but is still in the early stages of evaluation. The present study examines coaches' experience of the *reROOT* program to document their responsiveness to it and its perceived usefulness.

Autonomy Support, Structure, and Involvement

SDT proposes AS, structure, and involvement as positive alternatives to controlling behaviors (Deci & Ryan, 2000). AS refers to showing consideration for athletes' internal frame of reference and volition by being empathic (e.g., recognizing feelings), informational (e.g., giving rationale for demands and limits), and supportive of athletes' active participation in decision-making and problem solving (e.g., giving choices, encouraging initiative). Structure refers to the provision of clear and consistent rules, feedback, expectations, and consequences, while involvement refers to acceptance, warmth, responsivity, positive coach-athlete interactions,

and emotional availability (Mageau & Vallerand, 2003). According to SDT, these coaching behaviors can promote psychological health and optimal functioning as they facilitate the satisfaction of three fundamental psychological needs, namely, the need for autonomy (i.e., feeling volitional and endorsing one's actions), competence (i.e., attaining valued outcomes), and relatedness (connecting to others; Deci & Ryan, 2000).

Studies in sports contexts support SDT's claims in showing that AS, structure, and involvement are associated with need satisfaction and other positive athlete outcomes such as enhanced engagement, autonomous motivation, well-being, and performance (e.g., Amorose & Anderson-Butcher, 2007; Gagné et al., 2003; Jowett et al., 2017; Lemelin et al., 2022; Mageau & Vallerand, 2003; Pope & Wilson, 2015). For example, Lemelin and her colleagues (2022) showed that coach AS predicted athlete performance and well-being over a 1-year interval. Pope and Wilson (2015) also found that AS, structure, and involvement respectively predicted autonomy, competence, and relatedness. In turn, only autonomy predicted autonomous motivation, which was associated with performance. Another line of research also showed that feedback, a key coaching behavior, can be given in an autonomy-supportive way, which in turn was associated with higher-quality motivation as well as higher self-esteem, well-being, and performance (Carpentier & Mageau, 2013; 2016).

Accordingly, a coaching style characterized by AS, structure, and involvement is currently promoted to prevent mental health challenges and illness by leading Canadian sports organizations, namely the *Canadian Centre for Mental Health and Sport*, *Own the Podium*, *Game Plan*, and the *Canadian Olympic and Paralympic Sport Institute Network* (Durand-Bush & Van Slingerland, 2021). Coach interventions based on SDT are also being developed and evaluated, with the aim of promoting these key interpersonal behaviors (e.g., Bernsten &

Kristiansen, 2019; Cheon et al., 2015; Langan et al., 2015; Mahoney et al., 2016; Pulido et al., 2017; Reynders et al., 2019). Table 1 presents coaching behaviors taught in such programs.

Programs on Autonomy Support, Structure, and Involvement

Research anchored in SDT suggests that authority figures can learn AS, structure, and involvement, leading to performance, motivational, and mental health benefits for subordinates (e.g., Cheon et al., 2015; Mageau et al., 2022; Hardré & Reeve, 2009; Ntoumanis et al., 2021; Reeve & Cheon, 2014). In sports contexts, two programs focus specifically on the "autonomy support" dimension by aiming to help coaches support athletes' autonomy and decrease their use of controlling behaviors (Cheon et al., 2015; Mahoney et al., 2016). Coaches who participated in the *Autonomy-supportive intervention program* (ASIP; Cheon et al., 2015) reported increased work satisfaction, while their athletes won more medals in the 2012 Paralympics Games compared to the control condition. The program developed by Mahoney and colleagues (2016) did not seem to impact athletes' need satisfaction and frustration, mental toughness, or their perceptions of their coaches' autonomy-supportive and controlling behaviors. However, qualitative analyses of coaches' experience of the program, which were obtained through interviews, revealed that their participation increased their perceived self-awareness, provided confirmation for the autonomy-supportive skills they were already implementing, and served as a welcome opportunity to interact with other coaches.

Another program, the *Motivation factor program*, integrated the autonomy support and structure dimensions (Reynders et al., 2019). This program was effective in increasing coaches' autonomy support and structure as well as athletes' engagement and autonomous motivation compared to the control condition. Similarly, the *Motivation Activation Program in Sports* (MAPS; Bernsten & Kristiansen, 2019) focuses on autonomy support and reducing controlling

behaviors, while emphasizing the importance of sharing information and giving feedback. Qualitative analyses of the program suggested that coaches developed self-awareness and incorporated the program's skills in their daily interactions with their athletes.

Only two programs targeted all three key coaching dimensions of autonomy support, structure, and involvement (Langan et al., 2015; Pulido et al., 2017). When coaches participated in Pulido and colleagues' (2017) program, their athletes reported increased levels of competence and relatedness compared to the control condition. However, no significant difference was observed on the need for autonomy, motivation, and sports commitment. In their study, Langan and colleagues (2015) found that coach participation in their program better prevented burnout in athletes compared to the control condition, but no significant difference was observed on athlete motivation. Independent coders also observed a greater increase in autonomy support, structure, and involvement during coach-athlete interactions for coaches who participated in the program compared to those from the waitlist control condition.

Overall, these results suggest the potential of SDT-based programs to help coaches adopt more positive behaviors and ultimately, to improve athletes' performance, needs satisfaction, motivation, and sports engagement. Yet, available evidence is fairly inconsistent and only few coach training programs simultaneously teach behaviors aimed at promoting AS, structure, and involvement, SDT's key dimensions of a need-supportive coaching style. In addition, most programs only teach a limited number of skills, which could perhaps account for some of the inconsistent findings. To address these limitations, we developed the *reROOT* program to teach coaches how to meet their athletes' needs for autonomy, competence, and relatedness simultaneously with 40 concrete skills. The usefulness of this new coaching program, however, remains to be evaluated.

The *reROOT* Program

The *reROOT* program is inspired by SDT, the *How-to Parenting Program*'s content (Faber & Mazlish, 2012), and the ASIP format (Cheon et al., 2015; Reeve et Cheon, 2014). It is well-fitting with predominant motivational and sport theoretical frameworks (Forner et al., 2020), incorporating knowledge derived from SDT research (e.g., Carpentier & Mageau, 2013; Deci & Ryan, 2000; Koestner et al., 1984; Mageau et al., 2018; Mageau & Vallerand, 2003). In a nutshell, coaches learn to (1) consider athletes' needs satisfaction and avoid controlling language and behaviors, (2) acknowledge athletes' feelings and perspectives, (3) give autonomy-supportive change-oriented feedback, (4) provide autonomy-supportive structure, (5) provide information when asking for collaboration, and (6) offer optimal challenges and descriptive positive feedback. Together, these behaviors are hypothesized to empower coaches in providing structure and involvement in a more autonomy-supportive way. The *reROOT* program is thus in line with key recommendations from the Mental Health Strategy for High-Performance Sport in Canada, proposed by leading Canadian sports organizations (Durand-Bush & Van Slingerland, 2021). Offered in a group format, the *reROOT program* is skill-based and contains hands-on activities to facilitate the transfer of theoretical concepts into coaches' daily practice (Forner et al., 2020). Specifically, the *reROOT* program optimizes learning through the use of comic strips to teach concrete coaching skills (e.g., providing possible ways to move forward: Rather than "The way you ended the game was unacceptable", consider "Often it helps to think only about the next play; one at a time. You may also need to eat in the middle of the game"; see Table 2 for the complete set of skills), role-playing activities in which coaches adopt different interpersonal styles, and skill practice during and between sessions.

A first pilot randomized control trial (RCT; Lemelin et al., 2023) was conducted with university level coaches and their athletes to evaluate the efficacy of the program. Although this study took place during the COVID-19 pandemic, which limited coach-athlete interactions, results showed that coaches who participated to the program (experimental condition) reported being more autonomy-supportive one year after the end of the program compared to coaches who did not attend the program (control condition). Athletes whose coaches participated in the program also reported higher levels of autonomous motivation toward achievement goals and (potentially) performance two months after the program compared to their counterparts in the control condition. However, no difference was found on athletes' perceptions of coaching style, well-being, and controlled motivation toward achievement goals. Moreover, athletes in the experimental condition who perceived their coaches as having a less optimal coaching style at baseline, who practiced individual sports, or whose coaches experienced less stress reported more positive outcomes after the program than athletes in the control condition. These results suggest that the *reROOT* program could help coaches learn autonomy-supportive skills as well as facilitate athletes' sports development.

However, because this pilot RCT was a quantitative study, it could only include a limited set of variables, such as athlete motivation or coaching behaviors. Yet, the *reROOT* program could affect many other facets of athletes' or their coaches' lives. Moreover, coaches' experience of the *reROOT* program was not assessed in the quantitative study. Yet, research suggests that committing to such training programs can be hard for coaches. For example, each year in Canada, many coaches begin the National Coaching Certification Program (NCCP; i.e., the official education program for Canadian coaches), but only few complete the entire process and are certified (around 10%; see Gurgis et al., 2020). In their study, Gurgis et al. (2020) identified,

among others, time constraints and the tediousness of the process as the main obstacles to coaches' certification. It thus seems that for coaches to commit to any program, it is crucial that they respond well to it and perceive it as useful.

Participants' responsiveness is indeed an essential aspect of successful program implementations (Durlak & DuPre, 2008; Hidalgo et al., 2016), as it reflects their level of engagement with the program's material. In turn, participants' responsiveness, along with other indicators of program implementation fidelity—that is, the extent to which the delivered program corresponds to the protocol planned by the program developers (Dumas et al., 2001)—have been shown to influence programs' effectiveness (Durlak & DuPre, 2008). Thus, program evaluations must not only examine the benefits of interventions, but also investigate key aspects of program implementation fidelity (Durlak & DuPre, 2008).

Objective

Accordingly, the goal of the present study was to evaluate coaches' responsiveness to the *reROOT* program as well as its perceived usefulness, to gain insights into the program's implementation fidelity and potential effectiveness, respectively (Dumas et al., 2001). Using the same sample of coaches who attended the program in the pilot RCT (see Lemelin et al., 2023), we conducted semi-structured focus groups to gather in-depth knowledge about (1) participants' responsiveness to the program, that is the degree to which the program captured their interest as well as their engagement in implementing the program's skills (Durlak & DuPre, 2008), and (2) their perceived usefulness of the program, that is the circumstances in which the program's skills may be most relevant as well as the degree to which they perceive the program to have observable or foreseen benefits. Specifically, we inquired about four topics: coaches' appreciation of the program, their implementation of its skills, the obstacles and facilitating

factors to skills implementation, and its perceived benefits. These topics were selected because they are important components of successful program implementation (Durlak & DuPre, 2008; Randall et al., 2019) and they could provide insights on new potential program outcomes that could have been neglected in past quantitative evaluations, which mostly focused on athlete motivation and sport engagement.

By adopting such a detailed, descriptive analysis of focus group responses, we aimed to gain access to the full spectrum of coaches' reactions to and perceptions of the program as well as their thought processes regarding *why* they responded in certain ways to the program and *how* this program could be useful. Such depth of knowledge will not only provide direct evidence to determine coaches' responsiveness to the program and its perceived usefulness, but it will also guide future quantitative evaluations of the *reROOT* program and provide clues regarding the program's potential benefits, sustainability, and outreach. We focus solely on coaches' subjective evaluation of the program herein to provide a sufficiently detailed account of their experiences and appreciation and adequately reflect the richness of the information that could be obtained using this open and bottom-up procedure.

Methods

Participants and Procedure

All procedures were approved by the institutional ethics board at the authors' home universities (CEREP-20-042-D; 4748_e_2020). Written consent was separately obtained before participants began the program and the focus groups, respectively. A total of 32 coaches (23 men) from two Canadian universities from the same city participated in the program in Winter 2021. These coaches were involved in either team or individual sports. During the last week of the program, coaches were invited by e-mail to participate in focus groups planned to take place two

weeks later. Out of these 32 coaches, 13 (11 men) participated in the focus groups. They were between 25 and 60 years of age (M = 42.58, SD = 10.58), had between one and 36 years of coaching experience (M = 16.18, SD = 9.95), and attended five or all of the six sessions of the program. Coaches who did not participate in the focus groups were aged between 29 and 57 years old (M = 39.38, SD = 8.85), had between five and 40 years of coaching experience (M = 16.67, SD =10.07), and attended between one and six sessions of the program.

Program Delivery

Due to the COVID-19 pandemic, both the *reROOT* program and the focus groups were conducted online using video conferences available through the *Zoom* platform. We delivered the *reROOT* program in French to three groups, each containing between 10 and 12 participants. Coaches from different universities attended the program separately. Coaches participated in the six-week program (once a week, 3h/week) either during afternoons (one group) or evenings (two groups) between mid-January and the end of February 2021. A total of five facilitators (two men) with a scientific and/or sports background, also the creators of the program, were in charge of delivering the program. Each week, two of them facilitated the program's session according to their availability. Group facilitators took attendance at each session and recorded which program activities were delivered as planned. Overall, 90 to 94% of all planned activities were delivered in their entirety in each group. Each session of the program follows the same format: (1) review of the homework, (2) introduction of the main theme with a perspective-taking activity, (3) presentation of theoretical principles, (4) presentation of alternative skills with comic strips, (5) discussion and exercises.

Focus Group Interview Guide

Focus groups have some advantages over individual interviews: (1) they enable coaches to hear others' responses, which can help them consider a wider range of factors when thinking about the program, (2) they provide an opportunity for participants to discuss among themselves, which can prompt more in-depth assessment of the program (Morgan, 1997), and because group composition remained the same, (3) they constitute a safe space for participants to share information with familiar group members, which can foster disclosure (Vaughn. 1996).

Three focus groups, one for each program delivery, were conducted two weeks after the end of the program. Each one was composed of three to six coaches who attended the program together and lasted between one and 1.5 hours. In line with Breen's (2006) practical guide for focus group procedures, the focus groups followed four steps: welcoming of the participants, overview of the topic, rules of the focus group, and questions. Participants were informed that the focus groups were audio-recorded. They were allowed to have their video turned off, but given that focus groups were only audio recorded, they were encouraged to turn them on. Moreover, because focus groups were small, participants were encouraged to keep their microphones open and to talk freely, without raising hands, to facilitate discussions and exchanges. Guiding questions aimed to address coaches' responsiveness to the program (Durlak & DuPre, 2008; Hidalgo et al., 2016) and their perceptions of the program's usefulness. The below subheadings outline the four main topic categories that were used for analyses.

Appreciation of the program. Guiding questions inquiring about coaches' appreciation of the program were: "What did you like the most about the program?"; "What did you like the least about the program?"; "How could we do things differently (recommendations to improve it)?";

"Did the Zoom meetings (instead of in-person meetings) have any impact on the program in your opinion?"; "Would you recommend the program to your colleagues?

Skill Implementation. We inquired about the extent to which coaches tried to put the program's content into practice. Guiding questions were: "If you had the chance to practice the program's skills, what skill did you implement or try to implement?" or "If you did not have the opportunity to practice[1], what skill do you plan to implement or try to implement?"

Obstacles and Facilitating Factors. To reach a better understanding of the context in which the program skills could be most useful, we invited coaches to discuss about the obstacles and facilitating factors they encountered. Guiding questions were: "What obstacles and facilitating factors (things that make it easier to implement the skills) have you encountered?"

Benefits. We invited coaches to describe what benefits were gained from their program participation. Guiding questions were: "What effects/changes have you observed in yourself, your team, and in your relationship with your athletes since you participated in the program?"

Focus groups were semi-structured such that despite the presence of guiding questions, any theme and transition into other topics could naturally arise from participants, who were encouraged to freely respond to each other's comments (Liamputtong, 2011). The main researcher frequently asked questions to ensure that everyone's opinions were heard (e.g., "Is there anyone who would like to add something before we move to a different topic?").

Verbatim transcriptions of the focus groups were completed by the main researcher and a research assistant. A first draft was crafted with the transcription option available in the web version of Word on Microsoft Office 365. Transcriptions were later verified and corrected by

[1] Due to the COVID-19 pandemic and health restrictions in place at the time, opportunities to coach and interact with athletes were limited.

listening to the audio recordings. The five facilitators (and authors) of the program did not attend the focus groups and did not participate in the analyses of the transcriptions.

Plan of Analyses

Focus groups and analyses were conducted by the first author, who was also the main researcher. As a graduate student, the first author had extensive knowledge and experience with the SDT framework within coach-athlete relationships. A research assistant—an undergraduate student—also participated in data analysis. The research assistant was trained by the first author to become familiar with SDT constructs (i.e., readings and discussions on AS, motivation, and needs) and coding (i.e., topic description; examples of themes).

Analyses were performed on QDA Miner (Provalis Research, 2023) with the goal of categorizing all of the coaches' qualitative responses into main topics, prompted by the focus group questions. Open-ended questions were used with the intention that participants would be open to list and explain the reason why they like or dislike the program, the skills they tried, the obstacles and facilitating factors they encountered, and the benefits they observed.

We performed classical content analyses (Morgan, 1997). In the first step, discussions were transcribed and read in their entirety several times to gain familiarity with the data. Next, initial category codes were generated for each main topics or each group of questions (i.e., appreciation of the program, skill implementation, obstacles and facilitating factors, and benefits) throughout transcriptions. If a participant mentioned a response related to benefits during discussions about responsiveness, it was categorized into the benefits topic. If a participant's response would not have corresponded to a predefined topic, we intended to create a new topic category. However, this did not occur, presumably because guiding questions specifically targeted each predefined topic. Third, within each topic category, all different themes were identified, categorized, and

coded, a process called category coding. Category coding targeted the semantic level of meaning—thereby categorizing the data's content and capturing participants' meanings—to identify, summarize, and label all different themes that emerged within each predefined main topic. As a last step and only for ease of presentation, similar themes were grouped into higher-order theme categories within each main topic; similar themes will thus be presented individually but within the same section of the manuscript.

To ensure that no relevant information was forgotten and that all themes were captured, the research assistant generated the initial codes in parallel with the main researcher. Any differences in coding were discussed between the first author and the research assistant, leading to a consensus about initially discordant codes or categorization (e.g., deciding whether a particular content should be coded as a "Factor promoting responsiveness" or a "Facilitating factors for skill implementation"). For each theme (within each topic), we calculated its frequency (i.e., the number of participants naming or discussing a particular theme) and the number of focus groups in which each theme was discussed. Given that the amount of data was limited, we included all unique responses for transparency as well as to provide useful insights about how some future coaches may experience their participation in the program. The entire transcription of the focus groups was thus coded, categorized, and reported. When relevant, results were interpreted using an SDT lens (e.g., psychological needs, and motivation). Quotes were freely translated by the first author from French to English; grammatical errors that typically occur in verbal communication were omitted from translated quotes.

Results

All themes that emerged from the focus groups pertained to the two main objectives and four topics that were initially raised by the investigator, that is, coaches' responsiveness to the

program (i.e., appreciation of the program topic; implementation of program skills topic), and its perceived usefulness (i.e., obstacles and facilitating factors to skill implementation topic; benefits topic). Based on the guiding questions, when the appreciation of the program topic was raised, participants discussed three theme categories: the factors promoting responsiveness, the factors decreasing responsiveness, and whether they would recommend the *reROOT* program. While no separate theme category emerged within the implementation of program skills topic, three theme categories emerged for the obstacles coaches encountered (i.e., obstacles from within, above, and below) as well as for the factors that facilitated skill implementation (i.e., factors from within and above, and learning about SDT). Finally, coaches reflected on the program's impacts they observed on themselves (i.e., their self-awareness and emotions), the team culture, their athletes, and their coach-athlete relationship, yielding five theme categories for this last topic.

Coaches' Responsiveness

Appreciation of the program

Factors Promoting Responsiveness. Eight participants (three focus groups) mentioned that they appreciated the program's format. Specifically, coaches stated that they appreciated group discussions, liked that there were two group facilitators at each session and/or that there were different pairs of facilitators each time, and enjoyed the different pedagogical methods that were used (i.e., PowerPoint, breakout room in Zoom, workbook, comic strips). They said that the program format allowed them to be exposed to different ways of learning and thinking, and made the sessions less monotonous. Moreover, six coaches (three focus groups) found that the program was well structured. They indicated that using the same structure from week to week helped them learn and implement the skills.

Two coaches (two focus groups) also appreciated that the group facilitators acted as role models and used the program skills while leading the sessions or taking part in activities. It is possible that experiencing this type of relationship with the facilitators increased their self-efficacy about program skills (i.e., it is possible to use the skills), and their own need fulfilment. Moreover, it created a positive atmosphere (a safe space), which appears to be a positive feature of program delivery.

The video conference format did not seem to have a major impact on coaches' appreciation of the program or their understanding. Although coaches acknowledged that there was less participation and more distraction in video conferencing than in face-to-face meetings, they appreciated staying at home without having to travel, especially for the group finishing at 10 p.m.

Factors Decreasing Responsiveness. Two principal areas of improvement were noted by participants: the examples provided and the program's length. First, six coaches (two focus groups) found that the examples used in the comic strips or in role-playing activities were sometimes far from their reality (as university-level coaches) and not nuanced enough for some coaching contexts, hindering their identification with them.

> I really liked the examples, but felt like they were too all white or all black. I thought maybe they were a bit too caricatured. On one hand, we had the worst coach you could have in your entire career, and on the other hand, indeed, a perfect coach.

One participant found that some examples were not discussed deeply enough, while another participant found that too much time was spent on some examples.

> I would have liked that we pushed [the examples] a little bit more sometimes to have different layers […] of intervention.

> Sometimes I felt like we spent a little too much time on [the examples] in my opinion. I had the impression that I had understood. […] Once you've done 2, you understand. You know, I don't think we need to talk about it for 10 minutes. So, at some point, I was like, "okay, can we move on?"

Second, eight coaches (three focus groups) found that the program was long and noted that it was hard to stay concentrated for 3 hours, especially on Zoom and until 10 p.m. Coaches also mentioned that it would be difficult to be available for six sessions of three hours in a regular season as opposed to during the pandemic. Coaches suggested reducing each session to two or 2.5 hours. Some coaches specifically suggested to reduce the introduction of each session (i.e., review of the last session and homework).

One participant also suggested adding a section on nonverbal communication, as sometimes the body and tone do not send the same message as the words being used. This suggests that some parts of how to apply the skills (e.g., tone, gesture) are not covered by the program, which may create apprehension or anxiety for some participants.

Finally, four coaches (one focus group) found that some parts of the program relied too much on scientific jargon rather than lay language and that it was too academic (e.g., three hours with a PowerPoint, such as in a university course). They suggested adding videos of good and bad coach-athlete interactions and testimonials from coaches or former athletes. They also proposed to use simpler words and encouraged facilitators to share more about their sports experiences to reduce the gap between science and practice.

Recommendation of the Program. All coaches mentioned that they would recommend the *reROOT* program to other coaches. Among the recommendations, three coaches suggested incorporating the program into coach training and even including it in the National Coaching Certification Program (NCCP). Some coaches also highlighted that this program should be offered to new coaches especially and to coaches that work with young athletes, as the information learned is "relevant" and "essential".

> It's something that young coaches should learn. Not just at the elite level because that's the basis of coaching in my opinion. It is often at

> lower levels, with young children who are most likely to dropout of their sport […] because of bad interventions. So, not only I would recommend it, but, for me, it is really essential for anyone starting in the world of coaching, because at this level, the job of the coach is to make the youth feel valued, enjoy their sport, and want to continue doing it.

In the same vein, one participant noticed that the program is important because communication skills are not put forward enough in typical coach training.

> We don't spend enough time [learning communication skills] when we do our training as coaches. There is a lot of time on, well, the technical and tactical [skills] and especially also, for example, on the planning of a session, a drill, a season. […] Okay, that's part of coaching, […] but if we don't have good communication skills, well, we won't be successful, and we won't create a positive environment for our athletes.

Six coaches (two focus groups) also felt that the program could be helpful, not only for coaches, but also for sports team leaders, parents, business leaders, teachers, and "anyone who works with other humans".

Skill Implementation

Coaches participating in the focus groups mentioned that they had tried (if it was possible to see their athletes) or wanted to try (if it was not possible to see them because of the pandemic) skills that were presented in all of the six program sessions. Table 2 presents the number of participants who mentioned each skill during the focus groups. Skills from session 2 were mentioned most frequently and nearly half of the program's skills (18 of 40) were mentioned by at least one coach. These findings suggest that coaches (at least one) learned and valued at least half of the skills, especially those of session 2.

Perceived Usefulness of the Program

Obstacles to Skills Implementation

Obstacles were classified based on the type of pressures (i.e., determinants of autonomy-supportive style) proposed by Pelletier et al. (2002).

From Within. Three coaches (one focus group) mentioned that it was difficult to get rid of their habits and to apply the skills naturally when they were coaching. It also seemed to be a challenge for some coaches to find a way to be authentic.

> The obstacle […] is really trying to apply all the skills that we have learned in a natural way. […] It's kind of a mental gymnastics that we need to do on the spur of the moment, often when interacting with athletes, and that has to be done against the coaching culture.

In the same vein, two coaches (one focus group) stated that it was strange for them to use the skills with other coaches who participated in the program (e.g., giving change-oriented feedback to another coach). They mentioned that it created discomfort as both knew the skills that were being used. One coach also mentioned it was difficult to find a balance between structure and AS.

> Trying to get the answer from the athletes and trying to avoid putting words in their mouths, you know, while still giving them structure. This is what I find really difficult: to find the right balance ... to make them feel comforted, but at the same time, you have to motivate them […], but without rushing them.

From Above. During the focus groups, coaches said that a major obstacle was the COVID-19 pandemic. Due to health restrictions, indoor group activities were canceled, including group practices and all sports competitions. Many coaches were thus limited to video conference training with their athletes. Half of the coaches (three focus groups) reported that it was harder to practice the skills they had learned during the program because, among other reasons, they did not have frequent contact with their athletes. In addition, the fact that they did not have specific objectives for the year made it difficult for them to see the impact of their skill implementation.

Two coaches (one focus group) also talked about contexts in which it could be harder to use the program skills. They mentioned that they felt apprehensive about the group and competitive contexts. Contrary to one-on-one meetings during which coaches can plan how they

will convey their message, it would be harder to do so in a group or competitive context. Such apprehension may be partly due to the fact that the skills are not yet automatic (see the section *From within*).

> It is clear that in a stressful situation, in a match situation, sometimes you don't have time to think for 5 minutes about how you are going to approach it. It has to happen right now. I think that's when we are going to come back to our skills that are most natural to us, you know, those that we have developed over time.

One coach discussed a possible obstacle that could emerge within the coaching team by making a parallel with the family context (another hierarchical relationship in which the skills can be useful). They could foresee that using program skills could create internal conflicts within a coaching team if not all coaches from the same team attended the program. Although this apprehension was based on their interactions at home, their comment prompted other coaches to reiterate the importance of having a unified direction within a coaching team.

> What I realized at home is that, with my wife and my children, [when] I try to apply the skills […] I have the impression that when my wife is not patient, it annoys her that I am so structured and patient. […] I can imagine that it's something that is perhaps important to discuss with other coaches. […] If overnight, you change your way of intervening a lot, well that can create […] a conflicting situation where [someone can say]: "why all of a sudden do you react that way?" And it may even be felt by the athletes if the coaches don't get along on how to handle different situations.

From Below. Coaches named a few situations in which applying their skills was more difficult. Specifically, they reported that it was harder to use the skills with athletes displaying inappropriate behaviors (e.g., lack of motivation, latecomer), with less familiar athletes (especially given that interactions occurred via Zoom), and with athletes who do not have the same performance values and objectives as the organization.

Facilitating Factors

From Within. Eight coaches (three focus groups) talked about their past experiences as a facilitating factor. Specifically, coaches said that they had already implemented some of the program skills because they had already seen some of them modeled by other coaches, either during their coaching career or when they were athletes themselves. Coaches mentioned that the *reROOT* program gave them greater confidence to rely on those skills that they already knew and gave them direction for improvement. Two coaches (one focus group) noted that their field of study (i.e., psychology, education) also helped them implement and learn the program's skills because they had the theoretical background and/or knowledge needed to understand the program's content and relevance. Two coaches (one focus group) also mentioned that supporting their athletes' autonomy was a value they already had.

> We've all worked with different coaches or been coached by different coaches, and no matter who you work with, there are things you like about the way they do things, there are things you like less, there are things you would do, things you would not do. And [the program] puts it in perspective: the bag of tools that I have, that I liked, [it fits] with the theory that we have just seen. It's like: "OK, that was really good. [Or] OK, maybe there is still a way to improve it".

In contrast, one participant mentioned that they started to coach very recently and therefore had fewer habits to change, which was another facilitating factor.

Two participants (one focus group) reported as facilitating factors being open to the program's content and feeling motivated to change and work on their coaching. One of them observed that there probably was a selection bias in who attended the focus groups. Finally, two coaches (two focus groups) mentioned that, when they see that the skills work, it encourages them to keep trying them and helps them to feel competent.

From Above. Although the impact of the COVID-19 pandemic on the frequency of face-to-face interactions was greater than anticipated, three coaches (two focus groups) noted some advantages of the pandemic. Indeed, given that many of their interactions with their athletes took place via email or text messages, coaches noticed that they could plan their interventions and refer to the program workbook before responding to their athletes. It was thus easier to try to apply the skills.

Despite the pandemic, five participants (three focus groups) mentioned that they had the opportunity to coach athletes in person. These were either university-level athletes (face-to-face training that could respect health restrictions for some sports) or younger athletes registered in "sport-study programs" (i.e., programs that include sports as an integral part of the curriculum). For the coaches who had this opportunity, meeting athletes in person was mentioned as an advantage because they could try the skills as they learned them and immediately witness their impact.

In most teams, many coaches attended the program. Coaches from two focus groups pointed out that it facilitated skill implementation within the team by allowing them to orient their interventions toward a shared goal and to understand why they were changing their way of coaching. Moreover, having access to the perspective of other coaches on the team (e.g., how they understood parts of the program, what they remembered) helped to assimilate the material.

> I think that [the majority of our] coaches have attended the program […] So, by being exposed to the same training, I already feel that it has an interesting impact. We all feel that we understand what we are doing. We speak the same language in the end, our new language that we just learned.

Including SDT in the *reROOT* Program. Five coaches (three focus groups) mentioned that learning about SDT helped them feel that the program was important because it was

supported by the scientific literature. It also gave them the motivation to change and highlighted that the logic behind the different skills was the same.

> The first session where they briefly present Self-Determination Theory and the three pillars with the image of the table where the motivation is the surface and [the needs], the three table legs. This was the "buy-in" for the rest of the workshop. […] And then, for the rest, I wanted to understand, I wanted to improve myself precisely to successfully integrate this in my practice and to get these three elements in the way I interact with athletes.

Benefits

Coach Self-Awareness. Five coaches (two focus groups) mentioned that the program helped them develop self-awareness. More precisely, they noticed that they gained insight about themselves and about the way they interact with their athletes. After their participation, coaches reported better observing their own behaviors and reflecting on how they can improve themselves in line with the program. Coaches indicated that they questioned some of their practices, that they made associations between what they do and what they have learned during the program, and that they reviewed their intervention with their athletes to identify possible solutions afterward.

> I think it is also a good way to review our interventions and to self-assess a little bit, to identify possible solutions afterward, to say to yourself: "if the same situation happens again, you know, how could I optimize my intervention without losing the ... desire to develop autonomy in my athletes?"

Coach Emotions. Two coaches (one focus group) reported experiencing pride and satisfaction while trying the skills.

> When you help an athlete to find his own solutions, you always have a sense of pride, for yourself but also for the athlete… especially because he managed to get [there] by himself, with you just helping him think or navigate through it.

Impact on Team Culture. Six participants (two focus groups) mentioned that the *reROOT* program helped to create a team culture among the coaching staff. Specifically, the program

fostered discussions between the coaches and helped the team develop a shared vision.

> I find that it also generated conversations among us, because […] we all come from different worlds and have different experiences. It has generated some discussions on the culture of sport specifically, and on how we treat athletes… because the program is very much focused on giving a voice, and more autonomy to athletes.

Impacts on Athletes. Only few impacts on athletes were reported by the participants, and some coaches mentioned that this was perhaps due to the fact that they did not have the chance to see their athletes or interact with them in a competitive setting. Yet, five coaches (three focus groups) nevertheless observed positive impacts at the emotional level, such as pride, relief, and gratitude from their athletes. Seven coaches (three focus groups) also noted positive impacts at the behavioral level; they observed engagement, openness, and involvement. They also noted that athletes asked more questions, found more answers on their own, and were more rule-abiding. These outcomes were observed in video conferences, text messages and/or in-person interactions.

Impacts on Coach-Athlete Relationships. Four coaches (three focus groups) noted positive impacts regarding coach-athlete relationships. They observed that regular discussions and conversations were longer and that their relationships with their athletes were better and stronger. Moreover, they noticed that when they tried the skills, they achieved their objectives more easily and tensions between coach and athletes decreased faster.

> I tended to encourage athletes to find a solution immediately when things were not going well, but to take the time to settle down, and to recognize a feeling of disappointment, of sadness, I really felt that the athletes enjoyed that little moment. Then, the relationship was, I don't know if it was stronger, but there was really a nice dynamic, in general, every time I used that method.

Discussion

The purpose of this study was to document coaches' experience of the *reROOT* program, which aimed at increasing coaches' autonomy, structure, and involvement and ultimately

improve athlete sports development. Results of a previous pilot RCT revealed that coaches who participated in the *reROOT* program reported being more autonomy-supportive one year later compared to coaches in the control condition, while their athletes reported higher levels of autonomous motivation toward their goals two months after the end of the program (Lemelin et al., 2023). The current study adds to these findings by focusing on one important aspect of program implementation, namely coaches' responsiveness to the program (Durlak & DuPre, 2008; Randall et al., 2019), and by gathering in-depth knowledge about coaches' skill implementation and perceptions of the program's usefulness. Documenting coaches' experience of the program is particularly relevant in sport contexts given that it can be hard for coaches to commit to training programs (Gurgis et al., 2020) and program implementation, including coaches' responsiveness, can greatly impact its outcomes (Durlak & DuPre, 2008).

Our detailed analyses of the focus groups following the delivery of the *reROOT* program suggest that coaches evaluated the program positively. First, coaches appear to be responsive to the program. Indeed, they appreciated its format, structure, and content, suggesting that the program stimulated their interest and captured their attention despite some areas of improvement (i.e., number and depth of examples; session length). The number of areas of improvement and suggestions to improve the program was also smaller than expected and *all* coaches mentioned that they would recommend the *reROOT* program to other coaches. These findings suggest that coaches found the program's skills to be relevant and important to coaches' training and that levels of overall satisfaction were high.

Yet, coaches also mentioned some obstacles that made skill implementation more challenging. For example, they reported that it was difficult to get rid of some of their old habits, and that they felt uncomfortable using their new skills with other coaches. They also mentioned

that skills were harder to apply in some contexts or with some athletes. The fact that coaches find it easier to apply the skills in one-on-one context than in group context is coherent with previous studies showing that coach AS tends to be higher in individual than in team sports (Delrue et al., 2019; van de Pol et al., 2015). These obstacles highlight the importance for coaches to find their own way of implementing the program's skills so that they can feel authentic while doing so. Practice also seems key to transforming new responses into automatisms, which would facilitate skill implementation across contexts.

Despite these obstacles (and the COVID-19 pandemic), coaches tried or intended to try at least half of the program's skills, which suggests that the program has high practical salience (Former et al., 2020) and that coaches were motivated to practice what they learned. Skills of session 2 were discussed most often (see Table 2). This session focuses on being empathic and acknowledging athletes' feelings and perspectives, which is a key autonomy-supportive skill. It is possible that coaches found autonomy-supportive skills to be more novel or relevant (i.e., less discussed in regular training) than providing informational feedback or structure for example, which in turn could have motivated them to learn these skills to a greater extent. Another explanation is that coaches may integrate a limited number of skills at a time and at the time of the focus groups, they had only fully processed the first sets of skills. The fact that coaches discussed most often skills of session 2 is also coherent with the pilot RCT (Lemelin et al., 2023) in which they reported being more autonomy-supportive one year after the end of the program. Other SDT-based programs also include skills related to empathy and feelings acknowledgement (see Table 1), which suggest that these skills may represent the cornerstone of AS (see Joussemet & Grolnick, 2022, for a similar proposition).

Coaches also mentioned different facilitating factors that helped them with skill implementation. Specifically, they felt that learning about SDT, having the possibility to interact with athletes face-to-face, and having past experiences with similar skills helped them transfer their new knowledge into practice. This last finding is coherent with Benish et al.'s qualitative study (2020), which highlighted that coaches who experienced autonomy-supportive behaviors as athletes had the desire to be more autonomy supportive as coaches. Having seen these skills before and having experienced their potential effects might have increased their sense of competence and autonomy during skill implementation. Learning about SDT could also have increased coaches' perceptions of autonomy by providing the rationale (i.e., the theory) behind the proposed skills. Coaches also highlighted the benefit of attending the program with other coaches of the same team, which is coherent with Durlak and DuPre's review (2008) suggesting that having a shared vision is a facilitating factor in successful implementation of novel programs. It also corroborates Rocchi and Pelletier' study (2017) by suggesting that support between colleagues can help coaches become more need-supportive. Moreover, it is possible that attending the program together helped coaches fulfill their own need for relatedness. Overall, it seems that coaches were generally motivated to integrate the program's skills into their coaching.

Coaches who did have the opportunity to implement the program's skills with athletes in person and/or virtually reported many benefits. More precisely, the program helped coaches to develop self-awareness about their coaching interventions. This finding is in line with Berntsen and Kristiansen (2019)'s research showing that the *Motivation Activation Program in Sports*, another SDT based intervention that principally focuses on autonomy support, reducing controlling behaviors, and feedback (see Table 1), helped coaches develop awareness about their coaching practices. Many positive emotions and behavioral benefits in athletes were also reported

by the participants either in face-to-face or virtual interaction. They noticed that when they used the program's skills, athletes were more engaged, participated more in discussions, and respected rules to a greater extent, which supports the potential efficacy of the program. However, contrary to our initial expectations, aspects related to SDT, such as athletes' basic psychological needs or motivation (Amorose & Anderson-Butcher, 2007; Gagné et al., 2003; Mageau & Vallerand, 2003), were not mentioned by coaches during the focus groups. SDT based constructs may not be so apparent to coaches such that inquiring about athletes' experiences may remain necessary to fully capture the potential benefits of the program. Taken together, the present results nevertheless support the potential usefulness of the *reROOT* program in sports contexts, which extends past research on the efficacy of SDT based interventions on athlete sports development (e.g., Cheon et al., 2015; Reynders et al., 2019, see Table 1).

Importantly, one participant mentioned that although interpersonal skills such as those learned in the *reROOT* program are important and valued by coaches, they are not part of currently available coach training. This assertion echoes a literature review by Lefebvre et al. (2016) that highlighted that among 285 coach development programs, only 18 addressed interpersonal aspects of coaching, while six included intrapersonal ones, and 261 focused on sport-related aspects such as technical and tactical sports skills, planning, injuries, and ethical decisions. It thus seems that interpersonal competencies may not be sufficiently addressed in current coach training. This may be particularly important to remedy given that sport-related knowledge and competencies alone may not be sufficient to be an effective coach (Becker, 2009; Côté & Gilbert, 2009; Nash & Sproule, 2012). The *reROOT* program, if shown to be efficacious, could complement current training by helping coaches interact with their athletes in a more need-supportive and growth-promoting interpersonal style.

While most past quantitative work has focused on the impact of interventions on athletes' needs, motivation, engagement, and performance (e.g., Cheon et al., 2015; Pulido et al., 2017; Reynders et al., 2019), relying on a detailed analysis of semi-structured focus groups provided a rich and deep understanding of coaches' experience of the program, its benefits, as well as the obstacles and facilitating factors influencing skill implementation. It also allowed access to unique insights that would have been difficult to obtain with closed-ended questions. For example, participants emphasized the "culture shock" between the needs-supportive skills proposed in the program and those that are often seen in sports contexts. This delicate topic would have been hazardous to pursue in a quantitative study without hurting some coaches' sensibilities. They also highlighted the value of offering the program to all team members to create a shared vision and coaching culture, which suggested new and important research directions focusing on collaboration and team cohesion among coaches. Greater self-awareness was an unforeseen benefit of the program. Future quantitative studies could integrate these variables and other outcomes raised by the participants to capture the full ramifications of the *reROOT* program for coaches and their athletes. Finally, the areas of improvement as well as the obstacles and facilitating factors that influenced skill implementation are likely to apply to many intervention programs in the sports contexts. As such, the present study can guide the development and improvement of these interventions, thereby facilitating knowledge transfer and outreach.

Limitations and Future Studies

Although the present study suggests that coaches' responsiveness to the *reROOT* program and its perceived usefulness were high, several limitations must be kept in mind when interpreting these findings. First, focus groups tend to gain less insight into individual thought

patterns than do individual interviews because a minority of participants tend to talk more than others and sway the valence and climate of the group. Indeed, some participants may censor themselves or conform to the majority (Plummer-D'Amato, 2008), which may impact reported frequencies. Moreover, we had a limited amount of data such that saturation could not be reached, nor could we investigate within-respondent connections among different themes. Yet, the fact that many categories were discussed in two or three focus groups suggest that our results may not be fully accounted for by group influences.

Social desirability biases may also be present as coaches who invested a lot of time in a program may be motivated to justify their investment. Coaches also knew that the program was designed to help them in their coaching; they may thus have been motivated to make the program look useful. Alternatively, many coaches were highly experienced. As such, they could have easily seized this opportunity to share their knowledge on how to improve the program. In addition, not all coaches who attended the program participated in the focus groups. It is thus possible that only those who were satisfied with the program were motivated to attend the focus groups. Given that all coaches who participated in the focus groups attended five or six sessions of the program, this limitation needs to be addressed in future research by also including coaches who attended fewer sessions.

Regarding the coaches' experience of the program, the quantity of skills that were named was also limited by the question that was asked. Specifically, coaches were asked about the skills that they used or wanted to use and not about which skills they had learned. Skill knowledge was thus never actually assessed either through free-recall or by asking them to recognize (and describe) the program's skills from a larger list of potential skills. Perhaps coaches had learned a greater number of skills than was apparent. Future research could assess skill knowledge more

directly as well as investigate the pedagogical value of different program formats. Based on the areas of improvement and the obstacles that participants have identified, presenting the skills in shorter sessions with simpler wording and relying on more nuanced examples may improve skill retention as well as the relevance and impact of the program.

The COVID-19 pandemic also limited the benefits of the program, as many coaches had only a few opportunities to interact with their athletes and many (if not all) of these interactions occurred via video conferences. As a result, coaches shared fewer concrete examples of skill implementation than was expected, and many of the focus group discussions concerned broader, or hypothetical, scenarios. It is possible that coaches would have had more concrete examples of the skills and more positive effects of the program to report if they had interacted with their athletes on a regular basis. The added value of skill practice between sessions was indeed mentioned in the focus groups as a potential determining factor of the program's efficacy. It is also possible, however, that during a "normal" sports season, coaches would experience more obstacles to skill implementation, as they would have less time to reflect on their interventions and may be under more performance pressure, two factors that, according to our participants, are likely to make skill implementation more challenging. Future research is thus needed to replicate this study in more normal circumstances.

Moreover, coaches who attended this program were involved in a large variety of sports, including both individual and collective sports. Although having such a heterogenous sample increases the external validity of our findings regarding the potential benefits of SDT-based skills, it may have reduced the positive impact of the program by limiting productive exchanges among coaches who experienced similar contexts and challenges. Finally, considering that the *reROOT* program could contribute to team building by facilitating discussions and the

development of a shared vision and culture, future work could evaluate the relative efficacy of this program for athlete sports development in contexts where a single coach vs. all coaches attend the program simultaneously.

Conclusion

In conclusion, although future studies are still necessary to evaluate its efficacy, this study suggests that the *reROOT* program, which aims at helping coaches provide structure, involvement, and autonomy-support, could be a useful part of coaches' training. Coaches who attended the program and the focus groups appreciated the program, felt that they could recommend it to other coaches, and believed that the program skills could be implemented in their day-to-day coaching with positive impacts on themselves, their athletes, and their coach-athlete relationships. These findings highlight that the *reROOT* program could complement coaches' training in order to help them learn interpersonal (i.e., autonomy support) and even intrapersonal (i.e., awareness) skills.

References

Amorose, A. J., & Anderson-Butcher, D. (2007). Autonomy-supportive coaching and self-determined motivation in high school and college athletes: A test of self-determination theory. *Psychology of Sport & Exercise, 8*(5), 654–670. https://doi.org/10.1016/j.psychsport.2006.11.003

Bartholomew, K. J., Ntoumanis, N., & Thogersen-Ntoumani, C. (2009). A review of controlling motivational strategies from a self-determination theory perspective: Implications for sports coaches. *International Review of Sport and Exercise Psychology, 2*(2), 215-233. http://dx.doi.org/10.1080/17509840903235330

Becker, A. J. (2009). It's not what they do, it's how they do it: Athlete experiences of great coaching. *International Journal of Sports Science & Coaching, 4*(1), 93-119. https://doi.org/10.1260/1747-9541.4.1.93

Benish, D., Langdon, J., & Culp, B. (2020). Examination of novice coaches' previous experience as athletes: examples of autonomy support and controlling behaviors as influences on future coaching practice. *International Sport Coaching Journal, 8*(1), 48-61. https://doi.org/10.1123/iscj.2019-0031

Berntsen, H., & Kristiansen, E. (2019). Guidelines for need-supportive coach development: The Motivation Activation Program in Sports (MAPS). *International Sport Coaching Journal, 6*(1), 88-97. https://doi.org/10.1123/iscj.2018-0066

Breen, R. L. (2006). A practical guide to focus-group research. *Journal of Geography in Higher Education, 30*(3), 463-475. https://doi.org/10.1080/03098260600927575

Carpentier, J., & Mageau, G. A. (2013). When change-oriented feedback enhances motivation, well-being and performance: A look at autonomy-supportive feedback in sport. *Psychology of Sport and Exercise, 14*(3), 423-435. http://dx.doi.org/10.1016/j.psychsport.2013.01.003

Carpentier, J., & Mageau, G. A. (2016). Predicting sport experience during training: The role of change-oriented feedback in athletes' motivation, self-confidence and needs satisfaction fluctuations. *Journal of Sport and Exercise Psychology, 38*(1), 45-58. https://doi.org/10.1123/jsep.2015-0210

Cheon, S. H., Reeve, J., Lee, J., & Lee, Y. (2015). Giving and receiving autonomy support in a high-stakes sport context: A field-based experiment during the 2012 London Paralympic Games. *Psychology of Sport and Exercise, 19*, 59-69. http://dx.doi.org/10.1016/j.psychsport.2015.02.007

Côté, J., & Gilbert, W. (2009). An integrative definition of coaching effectiveness and expertise. *International Journal of Sports Science & Coaching, 4*(3), 307-323. https://doi.org/10.1260/174795409789623892

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*(4), 227-268. http://dx.doi.org/10.1207/S15327965PLI1104_01

Delrue, J., Reynders, B., Broek, G. V., Aelterman, N., De Backer, M., Decroos, S., ... et Vansteenkiste, M. (2019). Adopting a helicopter-perspective towards motivating and demotivating coaching: A circumplex approach. *Psychology of Sport and Exercise, 40*, 110-126. https://doi.org/10.1016/j.psychsport.2018.08.008

Dumas, J. E., Lynch, A. M., Laughlin, J. E., Smith, E. P., & Prinz, R. J. (2001). Promoting intervention fidelity: Conceptual issues, methods, and preliminary results from the EARLY ALLIANCE prevention trial. *American Journal of Preventive Medicine, 20*(1), 38-47. https://doi.org/10.1016/S0749-3797(00)00272-5

Durand-Bush, N., & Van Slingerland, K. (2021). Mental health strategy for high performance sport in Canada. The Mental Health Partner Group [Canadian Centre for Mental Health and Sport, Canadian Olympic and Paralympic Sport Institute Network, Game Plan, and Own The Podium]. https://drive.google.com/file/d/12H76N3gLkuiMuePYJymIvKnI8uweX0KD/view?usp=sharing

Durlak, J. A., & DuPre, E. P. (2008). Implementation matters: A review of research on the influence of implementation on program outcomes and the factors affecting implementation. *American Journal of Community Psychology, 41*, 327-350. https://doi.org/10.1007/s10464-008-9165-0

Faber, A., & Mazlish, E. (2012). *How to talk so kids will listen & listen so kids will talk*. Simon and Schuster.

Forner, V. W., Jones, M., Berry, Y., & Eidenfalk, J. (2020). Motivating workers: how leaders apply self-determination theory in organizations. *Organization Management Journal, 18*(2), 76-94. https://doi.org/10.1108/OMJ-03-2020-0891

Gagné, M., Ryan, R. M., & Bargmann, K. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology, 15*(4), 372-390. http://dx.doi.org/10.1080/714044203

Gurgis, J. J., Kerr, G. A., & Stirling, A. E. (2020). Investigating the barriers and facilitators to achieving coaching certification. *International Sport Coaching Journal, 7*(3)*,* 189-199. https://doi.org/10.1123/iscj.2019-0043

Hardré, P. L., & Reeve, J. (2009). Training corporate managers to adopt a more autonomy-supportive motivating style toward employees: An intervention study. *International Journal of Training Development, 13*(3), 165–184. https://doi.org/10.1111/j.1468-2419.2009.00325.x

Hidalgo, M. V., Jiménez, L., López-Verdugo, I., Lorence, B., & Sánchez, J. (2016). "Family education and support" program for families at psychosocial risk: The role of implementation process. *Psychosocial Intervention, 25*(2), 79-85. http s://doi.org/10.1016/j.psi.2016.03.002

Joussemet, M., & Grolnick, W. S. (2022). Parental consideration of children's experiences: A critical review of parenting constructs. *Journal of Family Theory & Review, 14*(4), 593–619. https://doi.org/10.1111/jftr.12467

Jowett, S., Adie, J. W., Bartholomew, K. J., Yang, S. X., Gustafsson, H., & Lopez-Jiménez, A. (2017). Motivational processes in the coach-athlete relationship: A multi-cultural self-determination approach. *Psychology of Sport and Exercise, 32*, 143-152. https://doi.org/10.1016/j.psychsport.2017.06.004

Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling vs. informational styles on intrinsic motivation and creativity. *Journal of Personality, 52*(2), 233–248. https://doi.org/10.1111/j.1467-6494.1984.tb00879.x

Langan, E., Toner, J., Blake, C., & Lonsdale, C. (2015). Testing the effects of a self-determination theory-based intervention with youth Gaelic football coaches on athlete motivation and burnout. *The Sport Psychologist, 29*(4), 293-301. https://doi.org/10.1123/tsp.2013-0107

Lefebvre, J. S., Evans, M. B., Turnnidge, J., Gainforth, H. L., et Côté, J. (2016). Describing and classifying coach development programmes: A synthesis of empirical research and applied practice. International Journal of Sports Science & Coaching, 11(6), 887-899. https://doi.org/10.1177/1747954116676116

Lemelin, E., Carpentier, J., Gadoury, S., Petit, É., Forest, J., Richard, J-P., Joussemet, M., & Mageau, G.A. (2023). The *reROOT* Coaching Program: A Pilot Randomized Controlled Trial Evaluating its Impact on Coaching Style and Athlete Sports Development. [Manuscript submitted for publication]. Department of Psychology, Université de Montréal

Lemelin, E., Verner-Filion, J., Carpentier, J., Carbonneau, N., & Mageau, G.A. (2022). Autonomy support in sport contexts: The role of parents and coaches in the promotion of athlete well-being and performance. *Sport, Exercise, and Performance Psychology, 11*(3), 305-319. https://doi.org/10.1037/spy0000287

Liamputtong, P. (2011). *Focus group methodology: Principles and practice*. Sage.

Mageau, G. A., Joussemet, M., Robichaud, J.-M., Larose, M.-P. & Grenier, F. (2022). How-to Parenting Program: A randomized controlled trial evaluating its impact on parenting. *Journal of Applied Developmental Psychology*, *79*, 101383. https://doi.org/10.1016/j.appdev.2021.101383

Mageau, G. A., Lessard, J., Carpentier, J., Robichaud, J. M., Joussemet, M., & Koestner, R. (2018). Effectiveness and acceptability beliefs regarding logical consequences and mild punishments. *Journal of Applied Developmental Psychology, 54*, 12-22. https://doi.org/10.1016/j.appdev.2017.11.001

Mageau, G. A., & Vallerand, R. J. (2003). The coach-athlete relationship: A motivational model. *Journal of Sports Sciences*, *21*(11), 883-904. http://dx.doi.org/10.1080/0264041031000140374

Mahoney, J. W., Ntoumanis, N., Gucciardi, D. F., Mallett, C. J., & Stebbings, J. (2016). Implementing an autonomy-supportive intervention to develop mental toughness in adolescent rowers. *Journal of Applied Sport Psychology, 28*(2), 199-215. https://doi.org/10.1080/10413200.2015.1101030

Morgan, D. L. (1997). *Focus groups as qualitative research* (2nd ed.). Sage.

Nash, C., & Sproule, J. (2012). Coaches perceptions of their coach education experiences. *International journal of sport psychology, 43*, 33-52.

Ntoumanis, N., Ng, J.Y.Y., Prestwich, A., Quested, E., Hancox, J.E., Thøgersen-Ntoumani, C., Deci, E.L., Ryan, R.M., Lonsdale, C., & Williams, G.C. (2021) A meta-analysis of self-determination theory-informed intervention studies in the health domain: effects on motivation, health behavior, physical, and psychological health, *Health Psychology Review, 15*(2), 214-244. https://doi.org/10.1080/17437199.2020.1718529

Pelletier, L. G., Séguin-Lévesque, C., & Legault, L. (2002). Pressure from above and pressure from below as determinants of teachers' motivation and teaching behaviors. *Journal of educational psychology, 94*(1), 186-196. https://doi.org/10.1037/0022-0663.94.1.186

Plummer-D'Amato, P. (2008). Focus group methodology Part 2: Considerations for analysis. *International Journal of Therapy and Rehabilitation*, *15*(3), 123-129. https://doi.org/10.12968/ijtr.2008.15.3.28727

Pope, J. P., & Wilson, P. M. (2015). Testing a sequence of relationships from interpersonal coaching styles to rugby performance, guided by the coach–athlete motivation model. *International Journal of Sport and Exercise Psychology*, *13*(3), 258-272. http://dx.doi.org/10.1080/1612197X.2014.956325

Provalis Research (2023). QDA Miner [Computer software]. https://provalisresearch.com/products/qualitative-data-analysis-software/

Pulido, J. J., Sánchez-Oliva, D., Leo, F. M., Matos, S., & García-Calvo, T. (2017). Effects of an interpersonal style intervention for coaches on young soccer players' motivational processes. *Journal of Human Kinetics, 59*(1), 107-120. DOI: 10.1515/hukin-2017-0151

Randall, R., Nielsen, K., & Houdmont, J. (2019). Process evaluation for stressor reduction interventions in sport. *Journal of Applied Sport Psychology, 31*(1), 47-64. https://doi.org/10.1080/10413200.2018.1480544

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159-175. https://doi.org/10.1080/00461520903028990

Reeve, J., & Cheon, S.H. (2014). An Intervention-Based Program of Research on Teachers' Motivating Styles. *Advances in Motivation and Achievement, 18*, 292-339. DOI:10.1108/S0749-742320140000018008

Reynders, B., Vansteenkiste, M., Van Puyenbroeck, S., Aelterman, N., De Backer, M., Delrue, J., ... & Broek, G. V. (2019). Coaching the coach: Intervention effects on need-supportive coaching behavior and athlete motivation and engagement. *Psychology of Sport and Exercise, 43*(6), 288-300. https://doi.org/10.1016/j.psychsport.2019.04.002

Rocchi, M., & Pelletier, L. G. (2017). The antecedents of coaches' interpersonal behaviors: The role of the coaching context, coaches' psychological needs, and coaches' motivation. *Journal of Sport and Exercise Psychology, 39*(5), 366-378. https://doi.org/10.1123/jsep.2016-0267

van de Pol, P. K., Kavussanu, M., & Kompier, M. (2015). Autonomy support and motivational responses across training and competition in individual and team sports. *Journal of Applied Social Psychology, 45*(12), 697–710. https://doi.org/10.1111/jasp.12331

Vaughn, S., Schumm, J. S., & Sinagub, J. (1996). *Focus group interviews in education and psychology*. Sage.

Table 1. List of the coaching behaviors taught in SDT-based programs

Bernsten & Kirstiansen, 2019 Active listening, express empathy, warm and caring; Show athlete that you trust them, avoid criticisms, minimize overt control; Clarification of the responsibilities, give choices, involve athlete in the decision; Explain your choice, share knowledge about sport; Ask open questions, encourage initiative; Non-judgmental feedback, positive feedback, target behavior that are under athlete control; Focus on self-improvement, focus on mastery and effort, self-set goals, give attention to all athletes.
Cheon et al., 2015 Vitalize athletes' inner motivational resources (autonomy, competence, relatedness) during training and practice sessions; Provide explanatory rationales for rules, requests, or procedures; Acknowledge and accept expressions of negative affect; Rely on non-pressuring language when addressing problems and providing feedback; Display patience.
Langan et al., 2015 Ten autonomy-supportive strategies detailed in Amorose, 2007; Bartholomew et al. 2009; Mageau & Vallerand, 2003; Reeve, 2009.
Mahoney et al., 2016 Provide task-choice within structure, provide rationales for rules and demands, acknowledge negative affect, use non-controlling language, nurture inner motivations; Avoid using rewards to control actions, negative conditional regard, intimidation, excessive personal control, judging, and devaluing.
Pulido et al., 2017 Adopt leadership styles depending on needs and situations, avoid behaviour of pressure and control, promote players' involvement, report on the objectives of the task, listen to the views and perspectives of the players; Adapt instructions and explanations based on progress, content-focused feedback and reinforcement, individualized learning and achievable challenge, balancing tasks with difficulty/skill, allow enough time to complete task, providing equal opportunities to all, prioritizing the process over the result; Adopt an attitude of empathy, developing specific activities, using methodological strategies characterised by closeness, respect, and complementarity.
Reynders et al., 2019 Allow negative affect, provide choice, offer a rationale, promote dialogue, align with athletes' pace, integrate fun elements; Give an overview and communicating expectations, monitor expectations, offer help, provide feedback, provide confidence & encouragement, promote self-awareness/insight; Be available for athletes, show interest & try to feel what is going on among athletes, provide (emotional) support, be 'warm' & friendly, stimulate togetherness, provide a positive atmosphere.

Table 2. For each session of the program, the number of participants who mentioned trying or using the skills.

Session and skills	Number of participants	Number of Focus groups
Session 1. Avoid controlling language and behaviors		
1. Keep in mind the 3 psychological needs in one's daily actions, decisions and behaviors		
Put the athlete's needs ahead of one's own*	1	1
Avoid projecting expectations*	1	1
Think before intervening (take more time)*	4	3
2. Use the internal compass worksheet to identify one's own autonomous motivations	-	-
3. Question one's beliefs in relation to athletes' psychological needs	-	-
Session 2. Acknowledge the athlete's feelings and perspective		
Integrative statement: Be empathic*	2	2
When athletes' preferences differ from coaches' preferences		
4. Prepare the training from the athletes' point of view (Place oneself in the athlete's shoes*)	2	1
5. Welcome, encourage and integrate athletes' input, suggestions, and improvements	-	-
6. Listen carefully	4	2
When athlete experience negative feelings		
7. Acknowledge with one word (saying "hum" *)	1	1
8. Accept reactions as valid and natural	-	-
9. Name the feeling	3	3
10. Consider the requests with the help of the imaginary	-	-
Session 3. Give change-oriented feedback		
11. Recognize athletes' obstacles and difficulties	-	-
12. Describe the problem	-	-
Use the word "at the same time" instead of "but" *	2	2
Give feedback that is more descriptive*	3	2
13. Provide possible ways to move forward	-	-
14. Provide choice among these possible ways	-	-
15. Name objective	-	-
16. Use a considerate tone of voice	-	-

Session 4. Provide autonomy-supportive structure		
Integrative statement: Avoid to anchor the athlete in roles*	1	1
When athletes misbehave		
17. Express own feeling without attacking character and before getting angry	1	1
18. State expectations	-	-
19. Show your athletes how to make amends	-	-
20. Give a choice between two acceptable alternatives	-	-
21. Take action	-	-
22. Problem solve	-	
When athletes are stuck in a role		
23. Look for opportunities to present the athletes with a new image of themselves	-	-
24. Facilitate situations where they can see themselves from a different perspective	-	-
25. Model appropriate behavior	-	-
26. Be a storehouse for past counter role behavior	1	1
27. If athletes return to old role, state feelings/expectations	-	-
Session 5. Provide information when asking for collaboration		
Integrative statement: Provide a clear framework*	1	1
28. Provide a rationale that makes sense to athletes when rule setting	1	1
29. Describe what you see or the problem	-	-
30. Give information	-	-
31. Remind it with one word	-	-
32. Express own feeling without attacking character and before getting angry	-	-
Session 6. Offer optimal challenges and descriptive positive feedback		
When athletes can decide by themselves		
33. Offer choices	1	1
34. Offer optimal challenges	-	-
35. Respect struggle	-	-
36. Avoid to rush to answer questions (Let athletes find their own solutions*)	3	2
37. Promote outside resources	-	-
38. Avoid taking away hope	-	-
When athletes perform well		
39. Describe athletes' behaviors or own positive feelings	1	1
40. Summarize athletes' behaviors with one word	-	-

*In coaches' words