

Less Talk and More Action Please

Youth National Team Handball Players' Experiences of a Mindfulness Training Program

Line M. Nielsen¹, Walter Staiano², Ulrich Kirk³ & Kristoffer Henriksen¹

¹ Institute of Sport Science and Clinical Biomechanics, University of Southern Denmark; ² Department of Sport and Exercise Science, Universidad de Valencia, Spain; ³ Institute of Psychology, University of Southern Denmark
Author contact <line.maj@hotmail.com>

Abstract

Elite youth athletes are exposed to many stressors in sport and non-sport contexts and may benefit from the ability to be present in the moment and focus on the task at hand. Such skills are cultivated in mindfulness training. Guided by separate semi-structured interview guides for athletes and coaches, we interviewed eight male youth national team handball players and four of their club coaches about their subjective experiences and the effects of taking part in a Mindful Performance Enhancement Awareness and Knowledge (mPEAK) program. We used deductive and inductive thematic analyses to analyze the interviews. Barriers to engaging in the mindfulness training included non-supportive coaches and time constraints, whereas facilitators included supportive teammates and understanding its relevance. Experienced effects of the program included improved focus, concentration, and decision-making in sport; increased focus, memory, and performance in school; and increased presence in private life. The value of teaching young athletes mindfulness thus transcended contexts. Coaches saw no major effects. Athletes and coaches provided specific recommendations for setting up mindfulness training programs in youth sport, including club-integration, direct involvement of coaches, and sport-specific exercises. Based on the study, we provide specific recommendations for setting up mindfulness training programs in youth sport contexts.

Key words: sport, athletes, coaches, mPEAK, meditation, intervention, qualitative research

“I am one of the leaders of the team and when the leaders show calmness it spreads to the whole team.” This is a quote from a Danish under-18 national team handball player illustrating a realization he had during the mindfulness intervention that we will present in this article. Over the last three decades, there has been an exponential growth in research and theory development on mindfulness. Mindfulness is defined by Kabat-Zinn (1992) as an open-hearted, moment-to-moment, non-judgmental awareness of oneself and the world. While the capacity for mindfulness can be seen as innate, it can be improved by training, and mindfulness courses are now offered in many settings, including sport (Haase, et al., 2015). Mindfulness has been proven to have several beneficial effects. It has been found that mindfulness can activate the regions of the brain working with self-regulation, problem-solving, adaptive behavior, and interoception (Boccia, Piccardi, & Guariglia, 2015; Kirk, Gu, Harvey, Fonagy & Montague, 2014; Kirk, et al., 2016), and that mindfulness training with novices improved working memory capacity and executive functioning, decreased mind-wandering, and increased the ability to process visual information (Bennike, Wieghorst, & Kirk, 2017; Zeidan, Johnson, David, & Goolkasian., 2010), including in a youth population (Britton, Lepp, Niles, Rocha, Fisher, & Gold, 2014).

It has been more than a decade since mindfulness and acceptance-based intervention studies found their way into sports. The focus has been on athletes’ performance and psychological and general well-being (Gardner & Moore, 2012). This body of intervention research has often taken the pioneer mindfulness-acceptance-commitment (MAC) approach as a starting point and helped athletes to be focused in the present moment, accept difficult thoughts and emotions, and to know and act on their values (Gardner & Moore, 2006). It seems that consistent mindfulness practice can assist athletes’ development and the maintenance of more economical use and allocation of cognitive resources (De Petrillo, Kaufman, Glass, & Arnkoff, 2009). At the same time, research has shown that mindfulness may also have other beneficial effects on athletes such as improved flow (Aherne, Moran, & Lonsdale, 2011; Briegel-Jones, Knowles, Eubank, Giannoulatos, & Elliot, 2013; Cathcart, McGregor, & Groundwater, 2014; Kee & John Wang, 2008), demolition of social barriers (Blecharz, et al., 2014), and self-compassion (al Awamleh, Mansi, & Ermeley, 2014; Mosewich, Crocker, Kowalski, & DeLongis, 2013).

These benefits are very relevant for young athletes as they experience increasing demands during adolescence, arising from an increase in the

amount and intensity of training in combination with more homework and longer schooldays, and a stronger wish to engage with peers. In this potentially stressful period, athletes need to be present in the moment and focus on the task at hand. At the same time, it is important that the athletes learn not to automatically worry and have negative thoughts when they face adversity (Henriksen, 2018; Henriksen & Larsen, 2016). Research suggests that mindfulness-based stress reduction (MBSR) programs can be helpful in dealing with stress in general (Sharma & Rush, 2014) as well as in athlete populations (De Francisco, Arce, del Pilar Vilchez, & Vales, 2016). MBSR programs teach the participants to react non-judgmentally to stressful events (Zeidan et al., 2010). A review of 17 MBSR studies concludes that the program is effective in reducing the psychological and psychical symptoms of stress (Sharma & Rush, 2014). It is from the MBSR approach that the Mindful Performance Enhancement, Awareness and Knowledge (mPEAK) program has been developed specifically for athletes. The program aims to include mindfulness training as a regular part of daily training (Haase et al., 2015; Lothes Ii, Hakan, & Kassab, 2013).

While recent literature has addressed the *how to* of implementing mindfulness and acceptance approaches in elite sport (Henriksen, Hansen, & Larsen, 2020), there has not been a focus on the experiences of young elite athletes with this type of training. The present study takes the perspective of young national team handball players taking part in a mindfulness program, and investigates their experiences in taking part in the program and the effects they experienced as a result of the program.

The present project emerged as a collaboration between the University of Southern Denmark, mPEAK, which is developed at University of California San Diego, and Team Denmark, who contributed a research grant. As part of the philosophy behind the project, we paid careful attention to the athletes' environment (Henriksen & Stambulova, 2017), particularly how the micro-environment supported (or did not support) the athletes' engagement in sport psychology training.

Based on a wish to more systematically investigate the effects of mindfulness training with young athletes, we designed a project in handball, which is one of the main sports in Denmark, in terms of active participants as well as international results. The Danish men's national team won the Olympic gold medal in team handball in Rio 2016, and several of the Danish handball youth teams are represented in the world elite.

We designed a randomized controlled trial with the aim of measuring the impact of mindfulness training on physical, technical, and cognitive performance (in states of rest and during stress and mental fatigue) for the U18 national men's handball team (Staiano, Nielsen, Hovgaard-Hansen, Romagnoli, & Kirk, in preparation). In this general study, the national team was divided into an intervention group and a control group. The intervention group participated in a six-week mindfulness intervention inspired by the mPEAK protocol with 20 minutes of mindfulness training five days a week using an app called Headspace (specifically the app's basic and sports packages) and a weekly Sunday Skype session with the project manager and mindfulness instructor, during which the athletes could ask questions. The control group continued their normal everyday life without any changes. All participants in both groups participated in pre-testing and post-testing. This testing took four to five hours and consisted of mind-wandering tests (SART), coefficient of mind-wandering, reaction time and number of correct responses, decision-making time, time and hand error rate, STROOP test, reactive agility test, and handball-specific agility test. The results of the study will be published separately from this article (Staiano et al., in preparation). In short, the study concluded that mindfulness training improves both cognitive and physical abilities in young elite handball players and reduces the negative effects of fatigue, both of which are determinant factors for elite handball performance.

While the standardized tests allowed us to measure precise effects on selected variables, they did not provide avenues to further improve such interventions in the future, nor did they look at effects that went beyond the athletes' physical and cognitive performance in the tests. Hence, in the present study we looked at the perspective of the participants by investigating: (1) how do youth team handball players experience participating in a mindfulness intervention, (2) how do their coaches experience being on the sidelines of the program, and (3) what effects in sport, school, and private life do the athletes and their coaches experience as a result of the program?

Method

This study is designed as an interview study, which allows us to explore athletes and coaches' experiences in depth and thus obtain a more nuanced understanding of their perceptions (Smith & Sparkes, 2016). This first-person perspective is particularly important in mindfulness research because mindfulness is essentially about inner personal experiences. The interview format also allowed us to investigate effects experienced in training, competition, and daily life and not just in the test situation. The study is based on critical realism, and for this reason we attempted to find the objective reality that is derived from human experience (King, 2016).

Participants

The Danish youth handball national team has 24 athletes with an age range of 17–19 years. For the interviews, we selected eight athletes from among the 24 players who took part in the intervention (control group excluded) based on self-reported experience with the mindfulness training and the amount of mindfulness training done. There were athletes who engaged in mindfulness training on a daily basis and athletes who only engaged in the training more sporadically (on average twice a week). We included both categories in the sample. We also selected four coaches for interviews. These were the club coaches of the participating athletes who trained the athletes on an almost daily basis. We selected coaches who came from larger and more successful Danish handball clubs who, beyond their role as youth team coaches, also worked as assistant coaches on senior teams in the highest Danish league. This ensured that they had solid perspectives on what the youth athletes needed in order to make a successful transition to the senior team.

Instruments

We designed separate semi-structured interview guides for players and coaches (Smith & Sparkes, 2016). As a warm-up, the athletes and coaches were first asked to talk about their background in handball and their experiences with sport psychology. The player guide was then designed

with two parts: (1) the athletes' experience of being part of the intervention, and (2) their experienced effect of the mindfulness training. The coach guide was designed in a similar fashion and had three parts: (1) The coaches' experiences with and thoughts about mindfulness in handball, (2) their experiences of being on the sidelines during the intervention, and (3) what effects they perceived the mindfulness training to have on the players. The interview guides were designed with open questions to allow the athletes and coaches to reflect during the interviews. More specific questions were only asked if the interviewees' initial accounts did not provide enough detail. These included questions about timeframe, the amount of training, the training itself, the perceived effects of the intervention (athletes), and how they were informed of or involved in the project (coaches).

Procedure

After the team was selected, the national coach obtained the players' informed consent, whereas the club coaches gave their own. The athletes and coaches were informed of the purpose of the study, that the study was voluntary, and that they could back out at any time. Furthermore, all participants in the study agreed that the overall team identity ("Danish youth national handball team") could be revealed but that the names of individual players and coaches and their clubs would remain concealed. The national team coach facilitated our contact with the players and club coaches. Appointments for interviews were planned in cooperation with the players and coaches to reduce any potential negative impact on their everyday schedule. Furthermore, depending on the players' preferences, interviews took place in the players' local gym or at their home. To fit in with the coaches' daily life, some of the interviews with coaches were done by phone while others took place in the gym or at a café. The interviews with the players lasted 40-60 minutes, while the interviews with the coaches lasted 20-30 minutes. The interviews took place five to six weeks post-intervention.

The interviewer

An interview is a meeting between two people (Smith & Sparkes, 2016). The interviewer (and first author of this paper) is a former team handball player, who also took part in the mindfulness intervention with the athletes. Knowing handball and having gone through the mindfulness intervention gave the interviewer a unique perspective. She used this to be curious and open. It also meant the athletes and coaches could express themselves in handball terms without having to explain them (Kvale & Brinkmann, 2009; Tanggaard & Brinkmann, 2010).

Analysis

The twelve interviews were transcribed verbatim and a deductive-inductive approach was used. All participants received their transcribed interview and were given the opportunity to revise, clarify, or add perspectives. None did so. A node tree was designed in Nvivo for the analysis. The overall categories were derived from the interview guide. Using the athletes' guide as an example, these included: (1) what was it like to participate in the program (with sub-nodes being the main parts of the training such as the app, the Sunday sessions, and the introduction weekend); and (2) the experienced effects of the program (with sub-nodes being effects on sport, school, and private life). The content of these categories was derived inductively from the athletes' statements. A similar coding process was undertaken with the coach interviews. Subsequently, we conducted a meaning condensation (Kvale & Brinkmann, 2009), in which the athletes' and coaches' statements were summarized as short formulations. After this, all nodes were scrutinized several times and a summary of each node was generated. To secure the anonymity of the players and coaches, aliases were created for all of them.

Results

We will first present the athletes and coaches' experiences of taking part in the intervention. These experiences relate to two overall themes: (1) reflections on the main elements of the program, and (2) resources and barriers for engaging in the mindfulness training. Secondly, we will de-

scribe the experienced effects of the program in sport, school, and private life.

Reflection on the main elements of the program

Setting the scene: Coaches' understanding of mindfulness training

The coaches found mindfulness training to be new and unknown territory. Several coaches related that a lack of knowledge of the mental side often led them to focus more on technical and physical training. Some coaches expressed doubts as to the potential effects of mental training and mindfulness. Coach 2 clearly stated he did not think it was possible to take the pressure out of high-pressure situations, and that being mentally strong is no guarantee of success: "Just because your concentration levels are good does not mean that you succeed in your attack every time."

None of the coaches arranged sport psychology or mindfulness training for their athletes as part of their club work. When they did engage with sport psychology issues, it was as part of regular talks with the athletes. However, it was not a systematic undertaking:

When you have many years of experience as a coach you know the mental aspects that can cause problems for the players, and you talk to them about those. So no sport psychology in a scientific sense, but perhaps a little pocket psychology. (Coach 3)

Coach 3 explained that the physical, technical, and tactical focus had a higher priority. Coach 4 said that the players had a lot of pressure in their everyday life, and because of that he saw mindfulness as an interesting tool to help the players be more present and less controlled by anxiety and expectations:

I am definitely positive about the whole idea of mindfulness, specifically because young people today are surrounded by so much hype and early on they are portrayed as great sport stars that just have to perform, but they also need to have an education and at the same time their mom and dad are telling them they have to participate in family birthdays.

The coaches did not feel informed and included in the program. Only one coach remembered even being informed about the fact that his athletes were about to take part in a mindfulness program. The coaches also

reported that they did not really know what mindfulness was, and that the researchers in the project did not define it for them.

Introductory weekend

The introductory weekend consisted of two days from 9 a.m. to 4 p.m. and focused on introduction to mindfulness, exercises, and potential effects from training. After each mindfulness session, the athletes would sit together in groups and share their experiences. The athletes came to the introductory weekend with different expectations. Several of them did not know that mindfulness would be a theme. They expected to play handball. This created some tension. As player 2 explained:

The time went slowly and we had to listen to a long presentation. I understood almost nothing about what he said, because there were so many words that I did not know the meaning of. But lying down and meditating was actually okay.

As player 3 described it, there was a good connection between mindfulness and handball: “We all came up with examples when we sat in the circle, so in that part there was a good connection.” Initially, the athletes found the mindfulness training strange. The initial introduction to mindfulness by the lead researcher was theoretical and included a lot of research. The athletes explained that this introduction was difficult to understand, boring, and could have been supplemented with more exercises. Although the weekend felt long, some athletes acknowledged that spending time on really learning about mindfulness and trying it provided a needed basis for the rest of the intervention.

The mindfulness training

Many of the athletes thought the mindfulness training sessions were tedious. A major part of the training focused on breathing and recording thoughts and took place in a resting state away from the sport. The athletes found it challenging to see the link to the sport and to implement mindfulness during games and training sessions when they had a high heart rate. The athletes were recommended to engage in mindfulness training at the same time and in the same place every day. This was a challenge because they had busy everyday lives. Most of the athletes conducted the app-based training sessions alone. They sat in a familiar place and focused on the mindfulness training sessions. Player 2 describes it this way: “I trained alone. I felt it was the best thing to do because if I did it with others, then I would be focusing on them and not fully concen-

trating on the session.” One athlete practiced mindfulness together with his father and found that it worked well.

The Headspace app

The athletes used the Headspace app for training. Player 4 described his experience using the app: “It’s been really great; it works really well with explaining how it should affect us and how mindfulness should be integrated in our everyday life. I think it’s been really good.” All athletes thought that the themes in Headspace had a positive impact on their understanding of the relevance and provided variety in an otherwise tedious training session. They were motivated because of the different themes that increased their understanding. The athletes described how the basic program helped with an understanding of mindfulness, where the sports packet made the training more context-specific. Regarding the performance context, one player explained that he mostly used the sport themes before a game, which helped him focus. Player 5, however, explained that the app could sometimes be uniform: “I don’t think that the themes were that different and I couldn’t really see the difference between them.” Even though most of the players found the app to be a good training tool, none of the coaches were aware that the players were training with it: “I had no idea about this” (coach 2).

Sunday sessions

The athletes participated in Sunday sessions called Zoom to support the training. During Zoom, the athletes learned about each other’s experiences and thereby increased their belief that they could be successful. These sessions helped them learn that they were not alone in having difficult thoughts and emotions, which they considered a positive realization. The athletes found that the sessions contributed positively to the interventions because they received help and competent feedback. The sessions were nevertheless often described as too long. Some of the athletes explained that they found Zoom less relevant because they knew that they could contact the science project manager at any time if they needed to. There was a big difference in how much individual athletes were motivated for and engaged in the mindfulness training. Having one communal session once a week secured a common understanding of the training for the following week. Player 2 explained: “Actually I think it was good to get in touch with the science project manager on Sundays to hear what we should work on over the next week.”

The coaches were unaware of these Zoom sessions taking place and explained that if they had been more involved in the intervention, they could have helped the players integrate mindfulness more directly in their actual handball training. Coach 4 explained:

If I had known more about the project, I could have helped more. For example, I imagine that they worked with the issue of missing a shot, what that does to a player, and how to deal with it. This is tied in with technical skills, and as their coach I would have liked to be involved in things like that.

Resources and barriers for engaging in the mindfulness training

The experience of taking part in the intervention stimulated the participants to reflect on barriers and challenges.

Supportive teammates?

The athletes trained continuously during the intervention and told key people in their circle of acquaintances about the mindfulness training. Player 2 said: “I talked to other players about the training because I actually think it is exciting, and my feeling is that people found it interesting.” Some of the athletes experienced that their club teammates, who did not take part in the intervention, were supportive and wanted to try the training. Others found that their teammates were less supportive, thought the training was strange, and even made fun of it. Many of the athletes explained that they were impacted by the views of their friends and teammates even though they tried not to be. This is supported by player 5’s statement:

My teammates would often make jokes and comments when we had to go and do mindfulness. I often felt that people outside the sport thought of the projects as weird, which is perhaps understandable. But I was more surprised that teammates and people inside the environment did the same. I think they ought to at least try it before they pass judgment.

Some clubs had several athletes in the program, whereas other clubs only had one. Throughout the project, the athletes shared their experiences with project participants from other clubs when they met for tournament games. For the athletes who did not have any teammates in the

intervention, the six days between Zoom were a long period without anyone to share experiences with. The athletes who had teammates taking part in the interventions frequently shared their experiences. This was considered beneficial for motivation and adherence to the training. Player 4 explains this: “Just having someone to share experiences with and discuss difficulties was nice. We helped push each other to actually do the required minutes of training.” Several athletes suggested that it would have been easier to do the intervention within a sports club setting rather than a national team setting because training together as a team was motivating. Furthermore, player 4 explained:

Training in a club setting could have improved the team dynamics by increasing our knowledge and understanding of each other. What are each person’s mental strengths and weaknesses? When does each of us lose focus and how can we help each other regain it? Things like that.

Lack of support from coaches

Generally, the club coaches did not support the mindfulness training very much. Besides not really knowing about the progress and content of the program, they found it hard to ask the athletes about the mindfulness training because they felt they did not have the knowledge and tools and did not want to come across as unknowledgeable. Other coaches described a lack of resources and said that they would not focus a lot of attention and energy on a few national team players in the squad who happened to take part in this project. In the words of coach 2:

Well maybe I should have asked more; taken a greater interest. I don’t want to make excuses, but I stand in front of 25 young players in training. And then three players came and told me they took part in some mindfulness training, minutes before the training started. The next moment, training was on, and I completely forgot about it. Later, when I received an email about the project, I recalled having heard something about it. There are just so many things on your mind as a coach.

Later in the interview, the same coach explained that even though he intended to follow the athletes’ progress, he never asked them what they had learned and whether they felt they could use it. As well as a lack of support and interest, some athletes felt that their club coaches did not believe in mindfulness as an important part of handball training and thus expressed more direct resistance. Examples of such resistance included

joking loudly about it and telling the rest of the team that he did not think that training was important or relevant.

Seeing the relevance

Mindfulness was a new type of training for all the athletes, and they differed in terms of how they viewed the relevance of the training. Some athletes were skeptical and unsure of whether the training would have any effect. Player 3 described how this developed over time:

In the beginning, I thought it was fun and good to try something new. Later I hit a brick wall where I thought the whole thing made no sense. I mean, if you don't feel any real effect after three weeks, it is hard to really commit.

In contrast, player 6 remained highly motivated throughout: "I think it was exciting to do something new, and we hadn't worked much on the mental side before." All players agreed, however, that they would have benefitted from the training being more context-specific, in particular if parts of the training had been more directly integrated in the on-court handball training.

Time constraints

The intervention was flexible in the sense that if an athlete missed a session, he was expected to do it another time at his convenience. Each training session only took 10 minutes, and "It is really just a question of sitting down, recording your thoughts, and being focused and relaxed." Still, the most common barrier reported by the athletes was finding the time needed for the training in an already busy daily schedule. They found that the mindfulness was demanding and they were worried if they missed sessions. This is supported by the coaches. Coach 4 explains:

Young people today have such high demands placed on them. They have to excel in school, sport, and social life. As a coach, you may think a player really needs to train more to realize his potential. But then there is also school and homework, and they should also be allowed to just be young people and be with their friends.

Most athletes stopped training mindfulness after the end of the formal intervention period because they found it too hard to find time every day, particularly when no one was checking their training. Player 1 is thinking about starting again:

It's just hard to find time. I have exams coming up before Christmas. But I actually realize the effects of the training more clearly now that I've stopped. So I think maybe I will start training again after New Year.

The effect experienced from the mindfulness intervention

The athletes experienced positive effects of the mindfulness training in game situations and in training, but also in school and private life.

Effects experienced in game situations

The first and most salient effect was that the athletes experienced improved focus. In their own view, this directly improved their performance in matches. The athletes generally reported an improvement in their mental presence during games and in their awareness of events in the present moment. Specifically, some athletes felt they were now focused from the very first minute of the game, whereas it had previously taken the start of the game and sometimes even the first half to find focus. Secondly, and as an extension of their improved focus, the athletes said that they felt slightly more relaxed and more patient. For example, an athlete described how he now felt less time pressure in offense and was better able to wait for the best moment to shoot. Thirdly, the athletes felt they had become more resilient in game situations. Player 4 describes this:

I feel I have become more open-minded towards the match. If, for example, we fall behind by a few goals, I am more patient and focused, whereas I used to sometimes panic a bit and have negative thoughts.

The athletes generally reported they had improved their ability to focus on the present moment and the next move. Finally, the athletes described how their new mental skills also had a positive effect on the team dynamics. Player 5 talked about how he had become more constructive in his communication. "Maybe I get less carried away and tend to speak less harshly when trying to make us better. I like to think I am more constructive and solution-oriented."

Effects experienced in training situations

During training, the athletes experienced improved focus and calmness. Particularly when tired, the athletes reported being better at focusing on process goals and on working on the optimal movement patterns.

They described that they had fewer periods of just playing without real purpose and focus. Also, “I feel that I have learned to find focus earlier, even during the warm-up.” Also, in weight training sessions, some athletes related how they had become better at focusing on the quality of every exercise and movement rather than just waiting to get it over with. Furthermore, the athletes described that they developed a better long-term perspective in relation to their overall development. When they felt pressure to perform here and now, they were more mindful of the fact that they are in a development phase. This also allowed them to be more process-focused and less frustrated when things did not go well in training. In the words of player 2: “I can now see the development perspective a little more clearly. If I have a bad training session and miss a few shots, I’m now better at just focusing on the next shot.” Several athletes describe how the mindfulness helped them see the development potential in every training session. Again, the training affected team dynamics, as described by player 4: “I am one of the leaders of the team and when the leaders show calmness, it spreads to the whole team.”

Effects experienced in the school setting

Although this was not the intent of the research project, several athletes expressed how the effects of the mindfulness training were not limited to the sport setting but visible in other domains. One such domain was school, where the athletes experienced increased presence. One of the athletes even connected this presence to a sense of freedom, because he had fewer concerns about assignments. Player 1 described how he had to be actively training to see such effects:

Well, right now I can’t feel it, but I can remember when we were training, my head felt clearer and I could deal with having assignments that were due without stressing about them. Right now I’m back to feeling the pressure of games and assignments, and there is a big difference from when I did my mindfulness training to now.

Some athletes reported that they became better at keeping their focus in their lessons. This resulted in better participation, as player 7 explained:

It is basically just having focus in the lessons. That can sometimes be a problem, because the lessons aren’t always fun. I actually think it is my concentration that has improved the most, which is probably also the most important thing in school.

At the same time, player 2 explains that he has even started taking more responsibility for his own learning: “I used to sit in the back with my phone and not really listen. Now I try to sit in the front and listen more.” Another athlete proudly said how the teacher had noticed changes in his focus and behavior. The teacher now expressed greater interest in him, and this changed his attitude towards school and was visible in terms of improved preparation and participation. Not all athletes experienced these effects. For example, player 3 said “In school, I haven’t really used it.”

Effects experienced in private life

Finally, the training had an influence on the athletes’ private life. One of the ways this is expressed is in the athletes’ presence in social settings, as explained by player 1: “In social groups, I used to sit and look like I was listening, but I was really just daydreaming and wasn’t part of the conversation. This happened far more rarely when I was doing mindfulness training.” Player 8 even described how “I’m able to open up a bit more and talk about things that I never talked about before.” This has helped the athlete interact more in social settings. One athlete said that he had become better at “handling a busy day with a full schedule and unexpected things on top of it,” and another used mindfulness as a strategy to calm his mind at night and experienced fewer sleep problems.

The coaches’ experiences

We also asked the coaches what effects they noticed in the athletes. They generally found it difficult to describe any effects. As they did not know what to look for, they did not see much difference. Coach 1 had talked to his athletes, and “Some tell me they got something out of it, and that it helped them get some tools to work with. But I didn’t notice it directly.” Other coaches did not notice changes but they also did not really look for them.

Discussion

In this study, we investigated the effects across life domains experienced by the Danish under-18 male national team in team handball who took part in a mindfulness training intervention. The athletes generally found the mindfulness training meaningful and managed to engage in the training, but also reported barriers to the training, including: finding time for

the training, disinterested coaches, not always seeing the relevance, and a non-supportive team atmosphere. At the same time, they reported that the different elements of the interventions, including the training app (Headspace) and the supportive Sunday sessions, were helpful for conducting the training.

Previous research has demonstrated that mindfulness has beneficial effects on general well-being, cognition, working memory, executive functions, and the ability to process visual information in general (Zeidan et al., 2010), as well as positive effects on the economical allocation of cognitive resources (De Petrillo et al., 2009), flow (Aherne et al., 2011) and dealing with stress (Sharma & Rush, 2014) in sports. In the present study, we found positive effects of the mindfulness training in game situations, training, school, and private life. In the *game situations*, the athletes experienced improved focus and mental presence. Even though negative thoughts still occurred during games, the athletes improved their ability to ignore them and instead focus on the present moment. The mindfulness training also positively influenced team dynamics and communication. In the *training situations*, the athletes experienced improved reflexivity, patience, and ability to focus on the long-term perspective.

An athlete's career is characterized by simultaneous developments across multiple levels, including sport, psychological, social, academic-vocational, and other levels (Wylleman & Lavallee, 2004). These levels are naturally interlinked and affect each other. In the present study, the athletes experienced that even though the mindfulness training targeted the sport level, it also had effects in other life domains, for example, increased presence in school and better social interactions in the private domain, as previously demonstrated by Blecharz et al., (2014). Because the mindfulness training improved not only the athletes' presence in sport but also in school and private life, we suggest that mindfulness training in sport be considered not only as a tool to improve sporting performance but as a tool to support healthy and positive personal development through sport. Mindfulness training may help develop skills that can be used both during and after a career in sport. At the same time, training mindfulness as part of a sport performance package may make it easier for athletes to engage in. Training mental strength in the gym is probably more accepted in this population than, for example, engaging in a stress management course in a school setting.

Previous research has targeted general well-being in a sport setting (Gardner & Moore, 2012). We found that the athletes' general well-being improved with the mindfulness training. This supports the results of intervention studies based on the mindfulness-acceptance-commitment (MAC) approach, which has demonstrated that it is possible to help athletes become more focused in the present moment, able to accept difficult thoughts and emotions, and engage in committed actions towards valued ends (Gardner & Moore, 2006). The athletes in this study also experienced improved present-moment focus, which helped them in their performance. At the same time, the athletes explained a change in accepting difficult thoughts and emotions, which had a positive impact on both themselves and the team.

One of the athletes explained that he first realized the effects of the mindfulness training after he stopped practicing it. As De Petrillo et al. (2009) explained, it is the consistent practice of mindfulness that can help athletes develop and retain a more economical use and allocation of cognitive resources. This was supported by the athletes' experiences that the effects disappeared over time when the training was not maintained. The athletes who managed to engage regularly in the mindfulness training stated that they were more focused on the game and training settings and described this as "flow." Several studies have demonstrated that mindfulness can positively affect flow experiences (Aherne et al., 2011; Briegel-Jones, et al., 2013; Cathcart et al., 2014; Kee & John Wang, 2008).

A Supportive Environment

Talent development takes place in complex environments (Henriksen & Stambulova, 2017). It has been demonstrated that coaches' involvement in sport psychology training helps athletes prioritize such training (Henriksen, Storm, Stambulova, Pyrdol, & Larsen, 2018), and even that coaches can be actively involved in designing and implementing mindfulness training exercises in sport-specific training (Hoyer, Becker-Larsen, Hansen & Henriksen, 2020). The present intervention took place in the context of the national team, and the club coaches did not engage or take an interest in the mindfulness training. Therefore, the athletes experienced that it was hard to commit to the training when back in the clubs. Their teammates played an equally important role, and the athletes

who engaged most fully in the mindfulness training were those who felt supported by their teammates.

Recommendations for future mindfulness training programs in sport

Based on what athletes and coaches emphasized in the interviews, we provide the following recommendations:

- Stimulate positive social support by organizing the training in groups of athletes with daily contact. Athletes engaged in sport psychology training benefit from having people who support them and the training they are going through. The training should be designed to enhance opportunities to discuss training and share concerns among the athletes.
- Select the appropriate context. The athletes and coaches suggested that the mindfulness training should have been organized at a club level rather than in a national team setting. This allows the club coaches, who interact with the athletes on an everyday basis, to support the training more whole-heartedly.
- Use appropriate language. Several athletes emphasized that the introduction was too academic and that they had trouble translating. We suggest that mindfulness instructors aim to use culturally appropriate language and examples.
- Train on-field. Several athletes suggested moving the mindfulness training onto the playing field by designing sport-specific exercises.
- Involve the coaches. The coaches expressed that they would like to be more aware of the intervention and have more knowledge of mindfulness. Future interventions should aim to involve coaches, for example, by teaching them about mindfulness, giving them tools to talk to their athletes about this training, and, when relevant, even by engaging them in mindfulness training of their own.

Methodological considerations

The present study is part of a larger randomized controlled trial study where the aim was to measure the impact of mindfulness training on the physical and cognitive performance in the under-18 men's handball team. By including the qualitative investigation outlined in the present study,

we aimed to expand our focus beyond the athletes' physical and cognitive performance in tests. The athletes and coaches' experiences have provided us with information and ideas that can improve such interventions in the future.

As part of the research team, the first author participated in the collection of both quantitative and qualitative data and as a participant in the mindfulness training. The strength of this set-up is that a good relationship with the athletes may have improved their honesty and willingness to take part in the interviews. A weakness could be that the athletes saw the first author as part of the intervention team hoping for good effects, and not an independent researcher just interested in their experiences (Kvale & Brinkmann, 2009).

Conclusion

Elite youth athletes are exposed to many stressors and benefit greatly from the ability to be present in the moment and focus on the task at hand, which are skills cultivated in mindfulness training. The present study allowed us to suggest: (1) mindfulness is a worthwhile training in youth sport and has effects not only in the sport but also in school and private domains; (2) in the fast-paced world of sports, athletes may have trouble seeing the relevance in such "slow" training and staying motivated; and (3) to maximize motivation, effects, and transference to the field, mindfulness training interventions should ideally take place in the daily training environment within the training groups and involve coaches.

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