Track and Field Athletes' Experiences and Perceived Effects of Flotation-REST: An Interpretative Phenomenological Analysis

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Abstract

Research has highlighted flotation-REST as a promising method for relaxation and performance enhancement in sport; however, to further evaluate the use of flotation-REST in an athletic environment, additional research is warranted. Semi-structured interviews were conducted with six elite track and field athletes about their experiences and perceived effects of flotation-REST. Athletes were interviewed twice; once for their immediate response and again to explore their perceptions of flotation-REST over time. The data was analyzed using interpretative phenomenological analysis. Flotation-REST was perceived as pleasant and relaxing. Five athletes reported less stress and an overall increase in well-being for one or two days afterwards, although they felt physically tired during training sessions. Being in a better mood, placing fewer demands on themselves, and feeling more optimistic and present were also perceived effects. This study shows the potential of flotation-REST as a technique for health promotion, stress management, and a means to practise mindfulness.

Keywords: sport psychology; relaxation; health promotion; stress management

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Psychological skills to cope with stress and maintain performance are acknowledged to be central for athletes' success (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Greenleaf, Gould, & Dieffenbach, 2001). Psychological skills training (PST) is commonly used to enhance performance and well-being, and includes techniques such as goal setting, imagery, self-talk, arousal regulation and relaxation (Hardy, Jones, & Gould, 1996; Vealey, 2007). Relaxation has been suggested to be a method to manage stress (Rumbold, Fletcher, & Daniels, 2012) and enhance recovery (Kellmann, 2002). Flotation-REST (restricted environmental stimulation technique) is one suggested relaxation method (Vealey, 2007); it requires an individual to float inside a dark tank partly filled with skin-temperature, highly concentrated saltwater in order to reduce external stimuli and increase physical and psychological relaxation (Bood et al., 2006). However, the utility of flotation-REST in sport psychology practice has not been comprehensively established in the research literature.

A number of studies have demonstrated flotation-REST as a promising technique in order to decrease health problems (e.g., muscle pain, depression) and to improve sleep quality, optimism, stress management and well-being (Bood et al., 2006; Bood, Sundequist, Kjellgren, Nordström, & Norlander, 2007; Kjellgren, Sundequist, Norlander, & Archer, 2001; van Dierendonck & Nijenhuis, 2005). In particular, lowered blood pressure, heart rate, and muscle tension have been documented among participants after flotation-REST and may underpin the observed psychological health benefits (Suedfeld & Borrie, 1999). Through self-reports, participants have stated that they felt calmer, more alert and energetic after flotation-REST, in addition to reporting reduced feelings of anxiety and stress (Suedfeld, Ballard, & Murphy, 1983; Suedfeld & Eich, 1995) as well as a more positive mood state (Suedfeld & Borrie, 1999). Individuals have demonstrated an increase in creativity directly after flotation-

REST (Norlander, Kjellgren, & Archer, 2003; Suedfeld, Metcalfe, & Bluck, 1987), whereas measurements one week after flotation-REST showed no improvements in creativity (Vartanian & Suedfeld, 2011); thus questions regarding the duration of the effects have emerged. Moreover, an increasing improvement in well-being has been documented until the 12th floating session whereas additional sessions beyond this point did not induce any further benefits (Bood et al., 2007). Many studies examining the efficacy of flotation-REST have used control groups in order to compare flotation-REST and other relaxation techniques (e.g., chamber REST, progressive relaxation); across these multiple studies, flotation-REST has been found to have the most positive effect on well-being and performance (e.g., Suedfeld & Borrie, 1999; Suedfeld & Bruno, 1990; Suedfeld, Collier, & Hartnett, 1993).

Although most research on flotation-REST has focused on health issues, flotation-REST has also been identified as a promising method for relaxation practice and performance enhancement in sport. For example, participants have demonstrated improved performance and higher technical ability after flotation-REST, compared to control groups, in basketball (Suedfeld & Bruno, 1990; Wagaman, Barabasz, & Barabasz, 1991). On a dart throwing task, participants who undertook flotation-REST were observed to significantly improve their performance compared to a control group that did not show enhancements (Suedfeld et al., 1993). Studies have shown performance enhancements after only one floating session (Suedfeld et al., 1993); however a related study found that athletes who used flotation-REST twice between competitions, in comparison to once, performed better (Wagaman et al., 1991). Further, elite archers performed better and experienced a decreased exertion directly after flotation-REST whereas non-elite archers did not improve noticeably (Norlander, Bergman, & Archer, 1999). Flotation-REST in combination with imagery practice has also been the focus of several studies; results have shown that participants who incorporated imagery with flotation-REST improved their athletic performance significantly in comparison

to imagery only (McAleney, Barabasz, & Barabasz, 1990; Wagaman et al., 1991), or imagery in combination with armchair rest (Suedfeld & Bruno, 1990) where the latter two did not yield any significant enhancements.

In attempts to explain the positive effects of flotation-REST on athletes, researchers have proposed two possible mechanisms (Suedfeld et al., 1993). First, athletes have reported that through flotation-REST they have reached a deeper level of relaxation compared with alternative relaxation techniques. Second, flotation-REST has been shown to increase the athlete's ability to concentrate and direct their focus, both of which have been reported as characteristic skills among successful athletes (Gould, Dieffenbach, & Moffett, 2002). Flotation-REST shows promising potential for athletes, but additional research is of value to gain more knowledge about the underlying mechanisms and to establish the most effective protocol to implement this technique in sports.

Although studies have shown positive effects on performance and well-being after flotation-REST (e.g., Norlander et al., 1999; van Dierendonck & Nijenhuis, 2005; Vartanian & Suedfeld, 2011), knowledge of how individuals experience flotation-REST and what effects they perceive is limited. Participants' experiences in the tank are particularly important as flotation-REST is performed in a special milieu (i.e., in a dark saltwater tank) that most people are initially unaccustomed to. Previous studies suggest that participants find flotation-REST pleasant and enjoyable (e.g., Kjellgren, Lyden, & Norlander, 2008; Suedfeld & Eich, 1995), whilst they experience deep relaxation that can potentially lead to falling asleep in the tank (Sakata, Shinohara, Hori, & Sugimoto, 1995). However, further research is necessary to gather more information regarding these outcomes, optimize the flotation-REST experience, and gain additional insight pertaining to how flotation-REST might be used in sport settings for performance enhancement and increased well-being among athletes. We seek to gain a better understanding of athletes' experiences of flotation-REST with the aim of

identifying perceived underlying mechanisms that influence the efficacy of the modality. Therefore, the aim of this study is to explore athletes' experiences and perceived effects of flotation-REST, including both the immediate response and experience over time related to their sport and everyday life.

Method

Participants

Six junior and first year senior elite athletes who used flotation-REST were purposefully sampled (Smith & Osborn, 2003), and asked to participate in this study. The research question focuses on the participants' experiences; therefore, the qualitative method of interpretative phenomenological analysis (IPA; Smith, 1996) was chosen as IPA allows researchers to explore the participants' experiences of a phenomenon as opposed to examining the phenomenon itself or the cause of it (Smith & Osborn, 2003). A purposive fairly homogeneous sampling method is preferable for IPA studies to enable interpretation and analysis of the target subject whilst minimizing the number of extraneous variables (Smith, Flowers, & Larkin, 2010). A small sample size enables researchers to explore the subject in detail and focus on the participants' experiences and perceptions, in line with IPA (Smith et al., 2010). The athletes, five female and one male, were between 17 and 23 years old (M = 19.7 years, SD = 2.34) and were all competing in track and field at a national level in Sweden (see Table 1). Alongside being elite athletes they were full time students in high school or at university. Prior to their use of flotation-REST, the participants had little or no experience of other relaxation techniques; additionally, they were not regularly or systematically working with PST. To protect the participants' identities their names have been changed.

Instrument

The athletes were offered flotation-REST through their sports club, once a week during a time period of two months for the purpose of trying a relaxation technique in combination with their ordinary track and field practice; none of the athletes had prior experience of flotation-REST. Usage of flotation-REST amongst the athletes was a separate activity from the present study; the present study does not include letting athletes use flotation-REST but merely studying athletes' experiences and perceived effects of flotation-REST. Whether the athletes wanted to partake in the present study or not did not affect their use of flotation-REST which their sports club had arranged. The information provided by the flotation-REST instructor was to try to relax as much as possible and some brief instructions: if thoughts distracted the athletes they were suggested to focus on their breathing, count their breaths, or try to let go of the thoughts. The flotation-REST tanks are sound and light isolated and located in a darkened, quiet room. The water level is 30 cm deep and saturated with magnesium sulphate in order for the individuals to float on their back, with their face above the waterline. The water is heated to skin temperature (i.e., approx. 35ºC). A session lasted 50 minutes, music was played in the beginning to help them relax and at the end to indicate that the session was coming to an end. If needed the individuals could turn on a light inside the tank or call for a staff member who was always nearby. The individuals could also easily open the tank lid from the inside at any time. The athletes themselves decided how frequently they wanted to partake in flotation-REST, as a result the number of sessions differ, between two and six times, mainly due to scheduling considerations for the athletes.

Design

A qualitative inquiry was deemed appropriate to retrieve knowledge of the athletes' personal experiences that might not otherwise emerge (Dale, 1996). Qualitative methods have gained increased interest and acknowledged utility in order to develop professional practice (Harper, 2008). The qualitative approach using IPA has recently gained increasingly

popularity in health and clinical psychology (Smith et al., 2010) and can be used to investigate the process that individuals use to make sense of their life world and lived experiences (Smith & Osborn, 2003). As such, providing an "insider perspective" (Harper, 2008) is particularly well suited for investigating the experiences of interventions such as flotation-REST. By using IPA (Smith, 1996; Smith et al., 2010) the researcher can gain in-depth understanding of the athletes' experiences and it also enables the athletes to freely share their thoughts, emotions, physical and psychological experiences, as well as perceived effects of flotation-REST. In consideration of an IPA perspective (Smith et al., 2010) the authors commenced this study with open-mindedness and flexibility as well as empathy and curiosity to understand each participant's view of flotation-REST. Further, it is acknowledged that IPA research is complex, without predefined categories and comprises an element of the researchers' interpretations; the present study seeks to reflect the participants' experiences as accurately as possible. Since the research topic is a novel area that concerns well-being and health, whilst focusing on the participants' understanding and sense-making of a shared experience, IPA is especially suitable with its phenomenological approach (Brocki & Wearden, 2006; Smith, 1996). Semi-structured interviews were used to provide the athletes an opportunity to speak freely about their experiences. Semi-structured interviews also allow the interviewer to be flexible and approach new relevant matters that arise during the interviews and explore the subject in detail, all in keeping with Smith et al. (2010) and IPA guidelines (Smith, 1996).

Procedures

Contact was first established with the track and field coach. The athletes were then contacted in person by the first author before a floating session. In order to build rapport with the participants and to learn about the flotation-REST procedure the first author, who conducted all interviews, was an assistant at the flotation-REST tanks during the time of the

study. The respondents were informed of the nature of the study and reminded that participation was voluntary. Informed consent was provided by all participants and by a guardian when a participant was a minor, i.e., under 18 years of age. Each respondent was interviewed on two different occasions. The first interview, lasting between 15 and 20 minutes, was conducted directly following a floating session. The purpose of the first interview was to gain the respondent's immediate response to flotation-REST. The only criterion was that it was not their first session of flotation-REST, so that they were familiar with the procedures. Initial analyses of the first interview were conducted by the first author to enable follow-up questions at the second interview. A second interview, lasting between 30 and 40 minutes, was then conducted with each participant at a time and place that was convenient for the participant. The second interview focused on the respondent's overall experience and perceived effects of flotation-REST. Due to competition season for the athletes and in order to gather the participants' overall experiences from flotation-REST the second interview was conducted a few months after the final floating session. The second interview started with an informal conversation to again establish rapport (Smith et al., 2010). All interviews were recorded, with the participants' permission.

Interview Guides

Two interview guides were developed, for the first and second interview respectively; these consisted of mainly open-ended questions as well as possible probes and prompts (Smith et al., 2010).[1] At the first interview each respondent was asked about their experience in the recently completed floating session, how they felt directly following its completion and to reflect on possible differences to earlier sessions. The longer second interview focused on participants' experiences of flotation-REST and the subsequent effects from an overall

[1] The interview guides are available from the corresponding author upon request.

perspective. Finally, participants were provided the opportunity to share any additional comments beyond those focused upon in the interview.

Data Analyses

Interviews were transcribed verbatim and IPA was undertaken by the first author in keeping with Smith et al. (2010). Transcripts were read and reread to enhance the understanding of the data. Exploratory notes were made regarding any points of interest relating to content, context and language use; this practice is in line with Smith et al.'s suggestions for producing a comprehensive and descriptive set of notes. Different themes and categories were developed in an inductive manner and grouped together based on similarities and connections. Differences in the notes and the emerging categories were also looked upon to help organize the findings, as suggested by Smith et al. Further, Smith et al. recommend that looking at the frequency of a certain category, as one indicator of the category's importance, is of interest if the questions during the interview have been particularly open-ended. For example, for this study comprised of mainly open-ended questions, the frequency of findings regarding experiences of reduced stress was taken into consideration as the word stress was not included in the interview guides. The procedures described above were performed for each interview and then the categories from each participants' first and second interview were combined. Next, patterns across cases and significant findings were scrutinized. Throughout the analysis the original transcripts were regularly consulted. Finally, two themes with categories emerged, and representative quotations were selected.

Credibility

The interviewer was experienced in the IPA methodology. To improve the study's credibility member checking was performed with each participant (Flick, 2007). Through member checking the collected data is checked for accuracy and verified (Cho & Trent, 2006). The second interview was also an opportunity to ensure the credibility of the results

from the first interview and enable clarifications to be made. Extracts from the transcripts are provided in the results section to support the themes being identified and to allow readers to examine the interpretations (Smith et al., 2010). The quotations were translated from Swedish into English by the first author. In order to enhance the credibility of the translations a back translation process was implemented (Geisinger, 2003) where the translated quotations were translated back to Swedish by another Swedish person with a university education in English and experience from studying in the US. The new Swedish translations were then compared to the original quotations and adjustments were made in the English translations to ensure the original meaning. Throughout the study memoing was practised where the interviewer recorded reflective ideas and thoughts of the data collection and analysis as well as observations from the interviews, adding to the trustworthiness of the study (Birks, Chapman, & Francis, 2008; Groenewald, 2008).

Results

From the analysis two themes, with four and two categories respectively, emerged and were related to the athletes' experiences of flotation-REST: experiences during flotation-REST; and perceived effects of flotation-REST (see Table 2). For an overview of the results the main sub-categories are also listed in the master table of the themes (see Table 2), and for each respondent it is shown whether that sub-category was found in their case.

Experiences During Flotation-REST

When the athletes spoke about their experiences during flotation-REST the following four categories emerged: the overall experience; how time was spent; the physical experience; and thoughts in the tank.

The overall experience. Ella, Jennie, David, Ashley and Kate experienced flotation-REST as positive, enjoyable overall, and looked forward to it. Ashley said: "It was very nice during all sessions. It feels so pleasant to lie there." Jennie, Ashley, Ella, Kate and Laura each

described their lives as hectic, and they sometimes felt stressed about managing a schedule full of activities, balancing both school and practice, as well as performing successfully. They reported a desire to work more extensively with relaxation and PST, and described a great need for it. Jennie especially articulated the need for relaxation both for herself and her teammates as she had observed negative effects on performance linked to anxiety and focusing problems:

> There are several in my group who are a bit, well, a bit tense, or they are a little bit stressed. And then it affects their performances at competitions and they get stuck. So I think we would need relaxation, more regularly. […] [At competitions] that's where everything goes wrong. Because I'm fast and I'm strong, but at competitions I start to think too much, so I need help to not think about those things.

However, following the use of flotation-REST Jennie expressed that she had experienced real relaxation. "I've experienced what it's like to be truly relaxed" she said, referring to her floating sessions. Laura was not as fond of lying in the tank as the others, due to feelings of claustrophobia, but still thought it was okay. Even Kate, who really appreciated flotation-REST, struggled at the beginning of her first sessions due to fear of water. She described: "Overall, I'm pretty uncomfortable in water. So the first times it has really been 'Oh! I'm lying in water. Oh, oh, oh!' And then you're supposed to relax mentally." However, after Kate became used to lying in the water she felt secure. All athletes, except for Laura, reported feeling secure in the environment of flotation-REST where they were isolated from the outer world and not affected by different temperatures, lights etc. Ella expressed: "It has been really nice. And especially that it shuts out a lot from outside, it's dark and there are not a lot of things around you."

How time was spent. For all athletes, flotation-REST became a time for relaxation and rest as Ashley stated: "I saw it as an opportunity to just relax and try to fall asleep almost

[…] that was very enjoyable." Since none of the athletes had previous experience of relaxation techniques, flotation-REST provided an opportunity to learn and practise relaxation. For Ella, Jennie, Kate, Laura and Ashley this became an important aspect of their floating sessions as they stated that they were not used to taking breaks in their everyday lives. Flotation-REST, with its restricted environment, became a respite in their daily lives when they could think, reflect, disconnect from stressful situations and have some free time alone. Kate explained: "It has been a nice experience. I've had some time for myself. It's not so common for me to take a break in everyday life."

During flotation-REST Laura, Kate, Jennie, Ashley and Ella reported falling asleep at times, which mainly was considered pleasant. However, Kate, who slept through most of her first sessions, had expected and hoped for a more active relaxation where she would still be conscious:

> I just fell asleep directly […] and snored loudly, and that didn't feel so amusing. […] Sleep, that you can do anywhere. So I felt a bit sad that I didn't really make use of that I was lying in this tank, floating with the right temperature and everything. I had all these possibilities, and I just slept.

They further described how they kept falling in and out of consciousness. Ashley said: "I sank very deep. I almost dozed off at times […] I'm more awake and then I disappear again, and then that repeats." Ella recalled the feeling of not really knowing if she had been sleeping or not: "I woke up even though I thought I wasn't sleeping." David, on the other hand, did not sleep during flotation-REST but felt relaxed, although he struggled at times with relaxation as he experienced the temperature to be too warm after a while, and had difficulties relaxing for the entire 50 minutes. He reported feeling relaxed physically, but had difficulty to not think about the drops of sweat on his forehead. Although David endeavoured to relax, it did not improve and he said that he maybe had been too effortful in his attempts to relax:

> The first times, I felt heavier and it was more pleasant […] But then, the last times, I've started to feel and think too much maybe, because I wanted to become more and more relaxed, but it just didn't get any better.

The physical experience. All athletes experienced flotation-REST as being physically positive and quickly became relaxed, despite the time it took for Laura and Kate to adjust. After Kate became used to the water she explained how her floating sessions facilitated her relaxation, she realized how (unknowingly) tense she was and how good it felt to relax for a while:

> It felt good in my body. You do feel quite tired when you actually relax like that. Other times you don't think so much, you just go on, you work-out. So when you take the time to relax you notice that "oh, how nice this was, to take some quiet time"

The athletes appreciated the feeling of weightlessness and not feeling the line between water and air. Jennie expressed: "The contours are not there, so that was a very cool feeling too, that you sort of [*pause*] There was no water or air, it was just very, floating."

Ella and Kate reported experiencing twitches, or "discharges" as Ella labelled them, in their legs. An explanation for the muscle twitches was unknown to the athletes, but they thought it might be connected to experiencing deep physical relaxation. The twitches came as a surprise and stirred up the water. Kate spoke of her twitches: "I still remember it like it was yesterday. I jerked awake, and I just 'slosh' and then a big hurricane, storm. It was a little bit scary, but still quite nice."

Thoughts in the tank. David, Ella and Jennie reported thinking extensively during flotation-REST, whereas Kate, Ashley and Laura did not experience many thoughts. Yet, all athletes indicated that it was hard to control their thoughts, and that they could suddenly and unexpectedly come to think about a wide range of topics. However, many thoughts were related to recent personal events, flotation-REST, track and field, or general relaxation as

expressed by Jennie: “You can’t control what you think about. It just comes a lot of thoughts. […] It was all sorts of things. But it was a lot of track and field and learning how to relax.” All athletes reported positive expectations prior to undertaking flotation-REST. Kate described the following when recalling her thoughts during flotation-REST:

> I think a lot about practice when I’m lying there. Since you’re there for a training purpose, kind of. […] I have thought that, you know, it’s for relaxation and recovery. So I have really felt that “how nice, today I will recover”, and I have always thought that “in the long run, it will be really good”

Jennie explained how her thoughts shifted and that she used imagery:

> I was just lying there, thinking about how cool it was that I was floating. And then I started to think about track and field and that I should be as relaxed as I was in the tank. And then I tried to picture a successful competition and that I was relaxed like that. Then I just floated away in my mind. […] I woke up by the music in the end. And then I was thinking that I was out in the middle of the ocean, floating. That was very nice […] it was like freedom.

Some thoughts were also connected to internal or external sounds. Jennie and Laura especially spoke about how the sounds of their heartbeat and breathing became very strong. Laura even got a bit annoyed at one point: “It pulsates. It’s scary when you hear just how [*pause*] I think that can be quite disturbing when you lie there, trying to relax, and you hear.” The external sounds, which four athletes mentioned, were from the corridor nearby. They registered the sounds but did not report getting disturbed by it.

The athletes perceived it to be relaxing and enjoyable not having to think about anything specifically, and when thoughts arose all of the athletes attempted to “let go” of them as they had been recommended. Ashley described how her thoughts just came and went again: “You do have thoughts, but they just float away, so I don’t think about that, that I’m

lying there thinking. Instead I relax and let the thoughts come and go. […] That was very relaxing." However, it was not always easy to let go of thoughts and at times having many thoughts became stressful. To relax and direct their focus, all athletes tried the counting and breathing tips they had received, and mostly it helped as Laura expressed: "I've tried to count […] one and then breath, and two. I've tried that most of the times and that has worked […] It's easier when I do that, I think, than just lying down, wondering when I'll relax."

Perceived Effects of Flotation-REST

After flotation-REST all athletes reported feeling some effects during the following hours or days. Two categories emerged: physiological effects; and psychological effects.

Physiological effects. During the first hours after flotation-REST all athletes felt physically relaxed. However, the specific feeling physically was described differently among the athletes. Ashley expressed: "I felt just more relaxed and very pleasant physically, light and relaxed sort of. More alert in some way, directly afterwards […] like I'd been sleeping for a long time and just starting to wake up. Very very nice." and Jennie described: "I experienced a tired feeling in my body, in the muscles in particular. It wasn't like I felt energized and alert physically. It was more, you know, tired and heavy." Predominantly, flotation-REST was completed in the morning with training sessions in the afternoon. Ella, Ashley, Jennie, Kate and Laura reported often feeling tired at the beginning of their work-out and that their bodies did not respond as they were used to. Only David did not experience any effects during the rest of the day, stating: "I felt a bit heavy physically when I got out of the tank. But that passed pretty quickly. […] It hasn't affected me the rest of the day." The other five athletes described feeling tired several hours after flotation-REST. Ashley explained:

> I was a wreck when I got home. I was really tired and just had to lie down and sleep for a while. And then we had practice. […] I was really tired […] mentally but also

> physically. I think it was because I had a hard time getting my energy up like usual, because I was rather relaxed.

Laura also recalled feeling tired at practice the first time, however, the more she got used to flotation-REST the less tired she felt afterwards:

> I was completely exhausted the first time. The whole day was ruined. I was suppose to go to practice later but “no, it won’t work”. But then it has gotten better and better, I feel. The last time I wasn’t at all as tired. […] So I think it was only a shock for the body to relax.

Ashley, Ella, Jennie, Kate and Laura experienced that the perceived physiological effects lasted a day, at most. External factors, from their everyday life, as well as expectations and raised awareness affected the perceived physiological effects. After flotation-REST they reflected more on how they felt physically, as described by Ella although she still tried to perform as usual: “I’ve certainly analyzed it, quite a bit, like ‘Am I more alert? Am I more tired?’ […] But when I had practice, I still tried not to think about it and let it affect me.” However, the athletes were not the only ones who had expectations of possible physical effects. Jennie described how their coach had spoken to them after flotation-REST: “We had intervals the day after and then our coach said to us ‘You might feel a little tired now during the intervals.’ But I don’t think I felt anything.”

Psychological effects. Directly after flotation-REST all athletes perceived positive psychological effects; overall, they reported a pleasant, relaxed feeling. However, at times they were relaxed to the point that they felt lethargic, but predominantly rested and alert. Laura explained the feeling after her sessions: “I’ve been pretty vigorous. For once, I was about to say. No, but mentally it feels so much better then before I go into the tank. I feel greater vitality.” Ella also described this: “I become calmer. It just feels better. That’s probably the biggest difference.”

Ella, Laura, Kate and Ashley perceived psychological effects for two days after flotation-REST, Jennie perceived effects for one day and David only for a few hours. David was also the only one who stated that he did not perceive much stress in his daily life or sport performance. David described the effects as relatively minor compared to the other five athletes; they reported feeling considerably calmer and less stressed afterward, and as they outlined that they felt their lives were hectic these calm feelings were appreciated. When comparing the tired physiological feeling and the relaxed psychological effect Laura said: "The tired feeling disappeared pretty quickly. But the relaxed feeling was there for at least two days." After flotation-REST one early Monday morning before school Kate said:

> It feels like I've slept for like 12 hours and have a peaceful day ahead of me, a Saturday or something. And it feels pretty slow. I wonder if you get into a different frame of mind all day […] it does feel hard to rush afterwards. […] It feels nice. It's not exactly usual for me to just chill out and take my time.

Ashley, Ella, Jennie, Kate and Laura perceived reaching a tranquil state afterwards as illustrated by Ella: "You just 'Yes, now I've entered the calm'" While feeling less stressed and worried Laura perceived fewer demands in her daily life. She had also struggled with performance anxiety, so being able to let go of stressful thoughts became especially important to her. She explained:

> As a person I'm pretty stressed, like "now I need to get home and study and do this and that, and this thing and that" When I get out [of the tank] I'm just not bothered by it, I'm more relaxed […] I'm not as stressed.

And she continued:

> I don't have the same demands on myself as I did before I went into the tank. Somehow I've managed to disconnect from that. […] You just don't have the energy no, to stress. So that's really good. […] For me it's different actually. You become

> calmer. […] I don't think about everything I have to do, or, things I in fact don't have to do. […] I'll deal with it when I need to. I don't know how to explain it otherwise. More in harmony.

Further, Kate and Laura reported feeling more content, focused and present in their lives afterwards. Kate explained how she became more attentive:

> When I walked out of there I just felt very calm […] more aware, and I really saw things. Before, well, then I was just walking by. But I think I get a bit more attentive […] like, Carpe Diem, and really try to live the day fully. […] I've probably not been as stressed as I usually am.

Kate, Jennie and Laura also stated that flotation-REST had raised their awareness of how psychological skills and relaxation affect and play an important part in their sport performance and lives. During their sessions they had experienced deep relaxation and been able to just focus on themselves, and afterwards, as they had felt less stressed, more present, and embraced these effects, they had reflected more on how relaxation and sport performance are connected. Kate explained: "I've become more aware of what it all means, the full picture with recovery, practice and the psychological aspects. So it feels like I've gotten better at taking it seriously, that it is actually important." Kate also noticed a change in her mood after flotation-REST, feeling more joyful and optimistic, stating that she was:

> Feeling happier. That's probably it. And that's related to the fact that I feel that I'm more attentive to things, and I enjoy everything a little bit more […] I become more positive towards just everyday things […] yes, a little happier and more positive.

Ella felt more energized as if she had more psychological resources to take on the day: "I have this calm feeling. And well, I do believe that you have some more strength to handle the things you need to do later." Kate also explained that directly afterwards she experienced time differently: "I feel like I do everything as usual, but still time passes very quickly. For

example, when I showered […] 15 minutes, just like that. Felt like five. […] That was the same after every session."

Ashley, Ella, Jennie, Kate and Laura believed that the perceived psychological effects, in addition to the physiological effects, were affected by other circumstances and their own expectations. After flotation-REST they were pleased they had invested time in relaxation as they believed it had positive effects on their lives as well as their sport performance. Kate described: "When you've actually taken the time, you feel 'now I've done something positive, now everything will be good' and then it gets good and it builds on and becomes this wonderful spiral of it all," she continued: "I think it's more mentally. That you believe that you've actually restored the energy, and then your outlook is 'now I'm rested, now it's all good'. And that helps you perform better later at practice." On the whole, they perceived more psychological effects of flotation-REST and longer-lasting than physiological effects. Ella said: "It's more that you become rested mentally, than rested physically."

Discussion

The present study examined elite track and field athletes' experiences and perceived effects of flotation-REST. Each of the six athletes considered flotation-REST to be relaxing and pleasant, but that circumstances in their general lives affected the experience, similar to previous research in flotation-REST (Kjellgren et al., 2008). Overall, the restricted environment of flotation-REST helped the athletes to relax and disconnect from events and thoughts related to their daily lives. During the day after flotation-REST five athletes felt relaxed and tired physically. The findings are consistent with previous research (Kjellgren et al., 2008) and add the context of an athletic environment. They described feeling slow during training sessions, and sometimes performing below their standard level of performance which implies that the acute effects of flotation-REST were potentially debilitative to performance. Although previous research has shown performance enhancements in sports after flotation-

REST (e.g., McAleney et al., 1990; Wagaman et al., 1991) the findings from the present study indicate that it could be of interest for further research to explore during which phase of training programs and competition preparations flotation-REST would be most effective. The athletes also reported reflecting more on how they felt at practice after flotation-REST and one athlete reported that their coach at one practice had suggested that they might feel tired physically. Thus, it is hard to distinguish between the impact of flotation-REST and their expectations. Further, five athletes reported sometimes falling asleep during flotation-REST, which might have also affected the perceived effects among the athletes.

Five athletes reported that the perceived psychological effects were more positive and persistent than the perceived physiological effects. For up to two days after flotation-REST, the five athletes perceived increased well-being, felt less stressed and less likely to become stressed. These five athletes also reported that they felt stressed in their lives in general, and flotation-REST provided required respite. The one athlete who did not experience any particular effects did not feel as relaxed in the tank as the others, and described himself as not generally stressed prior to undertaking the treatment. Whether the results observed in the present study were influenced by the specific life circumstances reported by participants, their personalities, or that flotation-REST did not suit particular individuals, is difficult to conclude (and beyond the scope of the research design of this study). However the relaxation, comprised of the mental and physical time-out in the flotation-REST tank, might have helped stressed athletes to place fewer demands on themselves resulting in a better mood, and becoming more optimistic, present and attentive. Previous research has also shown that participants have perceived reduced life pressure and also felt less likely to become stressed after flotation-REST (Suedfeld & Borrie, 1999). Thus, it appears that flotation-REST can help prevent emotional and physical exhaustion in sports and by extension may also be a

valuable method for reducing perceptions of stress and ultimately reduce the risk of burnout (Gustafsson, Kenttä, & Hassmén, 2011).

The athletes' descriptions of the effects of flotation-REST proposes that flotation-REST increased their ability to be mindful, not only during the time in the tank but also afterwards in their everyday life. Mindfulness is characterised by an individual non-judgementally observing thoughts, feelings and sensations from moment to moment and is often obtained through meditation (Bishop et al., 2004). Mindfulness practice has recently been proposed to compliment PST as it can be used to enhance the application of psychological skills training techniques and improve preparation for PST (Birrer, Röthlin, & Morgan, 2012). For further research it could be of interest to examine the possibility of complementing flotation-REST with mindfulness practice, and whether mindfulness practice could influence, prolong or deepen the perceived effects of flotation-REST. The findings in the present study might also support the proposition that flotation-REST increases athletes' concentration ability (Suedfeld et al., 1993). In the present study, three athletes reported feeling more vigorous and attentive as well as experiencing less worry during the following days after flotation-REST. These findings share similarities with mindfulness research that has reported reductions in stress, rumination about negative thoughts and emotions as well as increased awareness and well-being (Birrer et al., 2012; Brown, Ryan, & Creswell, 2007; Gardner & Moore, 2004). Therefore, it is plausible that flotation-REST could be a method for becoming more aware of one's thoughts and practising mindfulness. Importantly, although most athletes in this study felt more energized, calm and relaxed after flotation-REST, two athletes reported that flotation-REST had the potential to evoke unpleasant thoughts and emotions, for instance feelings of claustrophobia. The qualitative approach used in this study enabled these findings to emerge, and offers one explanation why previous studies have not consistently found positive effects of flotation-REST (e.g., Norlander et al., 1999). The

variability of experiences and subsequent outcomes of flotation-REST amongst athletes suggests further investigation is warranted; future research is required to explore moderating variables and the conditions in which flotation-REST is most effective.

Limitations

The number of floating sessions differed amongst the athletes; however, it was deemed relevant and important to include athletes who had undertaken flotation-REST only a few times as they offered useful insight that was not influenced by prolonged use and had not grown accustomed to the unique (lack of) stimuli inherent to flotation-REST. There did not seem to be any significant differences depending on the number of sessions and previous research has reported effects after only one session (e.g., Suedfeld & Bruno, 1990; Suedfeld et al., 1993); however, additional sessions might have affected the outcome. Interviewing participants after other number of sessions of flotation-REST might also be interesting for future research to gain more understanding of the flotation-REST experience and possible effects. Inherent to the research method of conducting interviews is the risk that respondents want to provide overly positive answers. That said, the results in the present study highlight similar findings as previous research on flotation-REST. Interviewing the respondents on two different occasions also enabled for a deeper understanding of the respondents' experiences. Further, to gain more knowledge about the outcomes of flotation-REST and explore possible correlations, for example between stress levels and perceived effects of flotation-REST, or between sport performance and perceived physiological effects, mixed methods research might be of interest. Besides interviews, physiological tests or questionnaires measuring stress or sport performance more specifically might be valuable here.

Conclusion and Practical Implications

In conclusion, the present study has collected in-depth information on athletes' experiences and perceived effects of flotation-REST. The findings add to the limited research

on individuals' experiences and perceived effects of flotation-REST, and specifically the use of flotation-REST in an athletic environment. IPA enabled the exploration of the respondents' experiences in detail and provided an insight that would not have been gained through the use of a positivist research design. Consistent with previous research on flotation-REST, five out of six athletes in the present study reported increased well-being and less stress after flotation-REST. The potential for flotation-REST to be used as a technique for health promotion, stress management, and a way to practise mindfulness among athletes is tentatively supported. However, the results revealed considerable individual differences across participants. The variability of the athletes' perceived effects of flotation-REST indicates the importance of individualized training and recovery programs, and the need for further research on the modality.

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Table 1

Demographic Details of Participants

Respondent	Sex	Age	Event	Total number of floating sessions = Session-number for the first interview
Ashley	Female	23	Long jump, sprint	3
David	Male	17	Long jump, triple jump	4
Ella	Female	19	Heptathlon	6
Jennie	Female	18	Hurdles, sprint	2
Kate	Female	19	Hurdles, long jump, sprint	4
Laura	Female	22	Long jump, triple jump	3

Table 2

Master Table of the Themes

Themes	Categories	Main sub-categories	Ashley	David	Ella	Jennie	Kate	Laura
Experiences during fl.-REST	The overall experience	Felt safe and enjoyed it	X	X	X	X	X	
	How time was spent	Fl.-REST meant relaxation practice	X	X	X	X	X	X
		Fl.-REST meant a breather in an otherwise hectic life	X		X	X	X	X
		Slept	X		X	X	X	X
	The physical experience	Positive and relaxing	X	X	X	X	X	X
	Thoughts in the tank	A lot of thoughts		X	X	X		
Perceived effects of fl.-REST	Physiological effects	Tired at practice	X		X	X	X	X
	Psychological effects	Felt less stressed and more calm	X		X	X	X	X
		Increased well-being	X		X	X	X	X
		Effects for one or two days	X		X	X	X	X

Note: Fl.-REST = Flotation-REST. "X" means that the result was found in that respondent's case.