Emotion and concentration regulation training in Swedish female handball players

A short-term IZO F-based intervention.

David Olausson

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A short-term IZOF-based intervention.

**Abstract**

The objectives of this mixed-method intervention study were: (1) To examine idiosyncratic profiles of emotions and performance of 3-4 leading handball team players in successful and less successful games and identify their strengths and limitations in emotion-concentration regulation; (2) To develop, implement, and evaluate an intervention program aimed at optimizing the players' emotion-concentration regulation and performance. The participants (n= 4, age= 24.5) consisted of four female elite handball players from the same team. An emotion performance profiling process was conducted to facilitate objective one. To facilitate objective two, a small group IZOF based short term intervention was developed and implemented. The participants’ emotion-performance profiles are presented. The evaluation of the intervention indicated that the intervention increased the participants’ awareness and knowledge, and stimulated psychological skills development (i.e., emotion regulation and concentration). Methodological issues, future directions, and implications are discussed.

Keywords: Applied sport psychology, concentration, emotion regulation, handball, intervention study.
Sammanfattning

Syftet med denna mixed metod interventions studie var: (1) Att undersöka idiosynkratiska profiler av emotioner och prestation för 3-4 ledande handboll spelare i framgångsrika och mindre framgångsrika matcher, och identifiera deras styrkor och begränsningar i emotion-koncentrations reglering; (2) Att utveckla, genomföra, och utvärdera ett interventions program med syfte att optimera spelarnas emotion-koncentrations reglering och prestation. Deltagarna (n=4, ålder= 24,5) bestod av fyra kvinnliga elit handboll spelare från samma lag. En emotions prestations profilering process utfördes för att främja syfte ett. För att främja syfte två, utvecklades och utfördes en IZOF baserad kort tids intervention i en mindre grupp. Deltagarnas emotion prestation profilering presenteras. Utvärdering av intervention indikerar att interventionen ökade deltagarnas medvetenhet och kunskap, och stimulerade utvecklandet av psykologiska färdigheter (d.v.s. emotions reglering och koncentration). Metodologiska frågor, framtida forskning, och praktiska implikationer diskuteras.

Nyckelord: Emotions reglering, handboll, koncentration, intervention studie, tillämpad idrottspsykologi.
“Just before the fight, when the referee was giving us instructions, Liston was giving me that stare. And I won’t lie; I was scared. Sonny Liston was one of the greatest fighters of all time. He was one of the most scientific boxers who ever lived; he hit hard; and he was fixing to kill me. It frightened me, just knowing how hard he hit. But I was there; I didn’t have no choice but to go out and fight.”

Muhammad Ali
(Thomas Hauser, 1991, p.74)

Whether novices or world champions, we are all inclined to experience certain feelings when we cross the line and engage in competitive sport, just as Ali described. Emotion may lead to changes in a range of cognitive functions that could influence performance, including attentional focus, decision-making, perception, and the recall of information (Lavallee, Thatcher, & Jones, 2004).

A key area of research within sport psychology concerns how skilled athletes regulate themselves psychologically and, in particular emotionally in preparation for and during practice and competition (Hardy, Jones, & Gould, 1996). When watching elite athletes perform in the Olympic Games, or the World Cup, one can’t help but admire the tremendous psychological skill these athletes possess, how do they keep their emotions under control, how do they manage to focus on the task with so much on the line? Great golf players managing to hit the green from far away with excellent precision despite the enormous pressure. Successful football players are able to distribute their attention between the position of the ball, opposition, and teammate, while ignoring the irrelevant distractions of the roaring crowd. What abilities do they possess to be able to perform these challenging tasks, and perhaps the most important question, can these abilities be taught to other athletes? Accordingly this study describes the development and implementation of an intervention with the purpose of optimizing the participants’ emotion and concentration regulation.

**Key terms**

Athletic performance is a pattern of sport specific behaviours executed by an athlete in a competition/game/practice, which is evaluated using objective and subjective criteria. The participants of the present study defined their personal criteria for successful or poor performance as to which degree an athlete achieves/accomplishes the goals and expectations he or she has regarding a competitive situation.

Any discussion of emotion regulation requires an understanding of what emotion is (Gross, 1998). According to Deci (1980) emotion is to be defined as a swift response to an actual or imagined stimulus event. Emotions consists of three fundamental components, it involves a subjective experience (i.e., cognitive component), a physiological response (i.e., arousal or activation), and certain action tendencies (as cited in Hanin, 2000). The subjective experience relates to an individual’s assessment regarding the significance of a specific emotional situation concerning personal harms and benefits (Lazarus, 2000). The physiological responses involve changes such as variations in heart rate, visceral functioning, blood pressure
and further reactions in the autonomic nervous system. The physiological responses may then promote an approaching or avoiding behaviour (Hardy, Jones, & Gould, 1996).

Attention and its role in human performance have been subjects of debate and examination for more than a century (Weinberg & Gould, 2010), and several different descriptions are available, accordingly a clear definition of the concept is required. The construct of attention refers to at least three different cognitive processes. The first dimension is what is commonly known as “concentration”, and refers to people’s deliberate decision to invest mental effort in things that seem important to them at a given moment. The second dimension of attention is the ability to “zoom in” on relevant information while ignoring potential distractions. The third dimension concerns one’s ability to perform two or more skills at the same time (Moran, 2009). Concentration in sport and exercise settings typically contains four parts, focusing on relevant cues in the environment, maintaining attentional focus over time, having awareness of the situation, and shifting attentional focus when necessary (Weinberg & Gould, 2007).

Before discussing the various aspects of psychological interventions to enhance performance, it is instructive to define the concept of psychological skill training. Psychological skill training refers to systematic and consistent practice of mental or psychological skills, with the purpose of enhancing performance, increasing enjoyment, or achieving greater sport and physical activity self-satisfaction. The method and techniques applied come from a wide range of sources. These areas include behaviour modification, cognitive theory and therapy, rational emotive therapy, goal setting, attentional control, progressive muscle relaxation, and systematic desensitization (Weinberg & Gould, 2010).

Emotion regulation may refer to either of two related phenomena: the regulation (of something) by emotions, or the regulation of emotions (Gross & Muñoz, 1995). Subsequently any discussion on emotion regulation should clarify a definition on emotion regulation. The current study is interested in the regulation of emotions. Emotional regulation is the automatic or deliberate use of strategies to initiate, maintain, modify or display emotions (Gross & Thompson, 2007). Emotional regulation is part of a self-regulatory process in which individuals consciously or non-consciously monitor emotions experienced, and develop strategies to maintain or change emotional intensity to desirable levels (Gross & Thompson, 2007). During emotion regulation, people may increase, maintain, or decrease positive and negative emotions. Consequently, emotion regulation often involve changes in emotional responding. These changes may influence the kind of emotions people experience, when they experience the emotions, and how they experience and express these emotions (Gross, 1999).

**Model of psychological preparation for peak performance**

The model of psychological preparation for peak performance (Hardy, Jones, & Gould, 1996) present the psychological factors influencing athletic performance (see Appendix 1). The model consists of five components and every component
influences an athlete in some way. The first factor consists of the fundamental attributes of the athlete (e.g., personality and motivation). The second factor refers to the psychological skills an athlete possess, how these skills are used, and which strategies are being used that could be essential for a successful performance. The third factor refers to the strategies an athlete applies to cope with adversities (such as injuries or attention distractions). The fourth factor is the state the athlete strives to attain (i.e., reaching an optimal performance). The fifth factor is what surrounds the model, symbolizing the environment (e.g., social support). This factor influences the four other factors and thereby indirectly influence the athletes’ performance (Hardy et al., 1996). The model is relevant to the current study as it highlights the importance of effective utilization of psychological skills to attain an optimal emotional and cognitive state (i.e., task specific ideal performance states), which is essential to achieve peak performance.

**Individual Zones of Optimal Functioning Model [IZOF] (Hanin, 2000, 2007).**

The IZOF model’s primary objective is to describe, explain, predict and provide recommendations for regulation of performance related psychobiosocial states, which affect individual and team activity (Hanin, 2000). The model focuses on patterns, structure and functions of idiosyncratic emotional experiences of athletes/teams in various performance situations, to provide an explanation of the dynamics of emotion-performance relationships. The IZOF model serves as a framework for quantitative and qualitative analysis of the structure and function of performance related emotional experiences (Hanin, 2000).

The IZOF model includes five dimensions (form, content, intensity, time, and context), which are the foundation for the systems description of performance psychobiosocial states and emotion-performance relationships. An athlete’s performance state is manifested in the form dimension, with seven basic components: cognitive, emotional and motivational, (i.e., psychological aspects of a state), bodily and behavioural (i.e., biological or psychophysiological aspects), and performance and communicative that reflect a person’s observable social interaction with the environment (Hanin, 2000).

The emotion content is conceptualized within the framework of two factors, hedonic tone (pleasure-displeasure) and performance functionality (functional-dysfunctional effects on the performance process) (Hanin, 2007). The four-emotion category framework consists of four global emotion categories that derive from hedonic tone and performance functionality. The categories are pleasant and functionally optimal emotions (P+), unpleasant and functionally optimal emotions (N+), pleasant and dysfunctional emotions (P-), and unpleasant and dysfunctional emotions (N-). Functional emotions relate to successful performance, whereas dysfunctional emotions relate to poor performance. Athletes are to identify person-relevant and functionally important emotional experiences by using their own vocabulary of self-generated idiosyncratic labels. The labels describe athlete’s subjective pleasant and unpleasant experiences prior to/during a performance.
Selected idiosyncratic emotional labels are categorized into one of the four global emotion categories (Hanin, 2007).

To conceptualize the intensity dimension at an individual level the IZOF model uses the in-out of the zone concept. The in-out of the zone concept serves as a guiding principle in assessing, predicting and optimizing an individual’s performance. Using athlete generated items the in-out of the zone concept is used to describe separate and combined effects of positive and negative emotions. Individual zones of functional/dysfunctional intensity are identified for each functionally optimal and dysfunctional emotion. Zones of optimal function are assumed in some emotions, within these zones the probability of a successful performance is at a peak. In other emotions dysfunctional zones are assumed, within these zones the probability of a poor performance is highest. The level of intensity, which is functional/dysfunctional, varies for the same emotion and different emotions between athletes. The total effect of positive and negative emotions on performance is determined by the interaction of functional and dysfunctional effects (Hanin, 2000).

The time dimension reflects the dynamics of emotional experiences prior to an action, during task execution, and after performance of a task. The context dimension is an environmental characteristic. It includes situational (practice/competition), interpersonal, and intragroup antecedents or consequences that determine emotion intensity and content (Hanin, 2000). Emotional experiences of different form, content, and intensity are typically observed in various settings (i.e., context).

The model states that it is the interaction of specific emotion content (e.g., nervousness, happiness, etc.) with emotion intensity (low, moderate, or high) that produces specific functional or dysfunctional effects on athletic performance. In other words the interaction between emotion content and intensity determines the emotional influence (Hanin, 2007). The IZOF model explains the emotion-performance relationship by matching resources to task demands (Hanin, 2007). Specifically, emotions that are associated with optimal performance ensure efficient recruitment in the mobilization of energy and utilization of skill for favourable task engagement (Hanin, 2000). Emotions that are non-optimal reflect a demobilization of energy and miss-use of skill, and are subsequently dysfunctional for performance (Hanin, 2000).

The IZOF model states that each athlete has a specific constellation of individually functional and dysfunctional emotion content, described by athlete-generated idiosyncratic markers. Idiosyncratic emotion content and intensity are different in practice and competition, and also vary across pre-, mid-, and post-event performance situations (Hanin & Stambulova, 2002). The IZOF approach has been extensively tested and validated across cultures, sports, ages, and between genders (e.g., Cohen, Tenenbaum, & English, 2006; Robazza, Bortoli, & Hanin, 2004; Woodcock, Cumming, Duda, & Sharp, 2012).

A process model of emotion regulation (Gross & Thompson, 2007)

The ways in which emotions are regulated are almost limitless (Richard & Gross, 2000), studies indicate that people naturally use conscious and non-conscious strategies to regulate their emotions (Thayer, Newman, McClain, 1994) and that over
400 different strategies are used to regulate emotions (Koole, 2009). Thus, a framework clarifying the different emotion regulation strategies available is considered informative.

Gross and Thompson (2007) present five classes of emotion regulation strategies used to manage the circumstances creating an emotion response, and/or the resultant interpretation of those circumstances or emotion response. Antecedent-focused emotion regulation strategies occur prior to the generation of emotion, and intend to modulate the upcoming emotional experience (Gross & Thompson, 2007).

Specific antecedent-focused strategies include:

- **Situation selection** involves acting in a way that makes it more (or less) likely to end up in a situation expected to rise desirable (or undesirable) emotions. **Situation modification** refers to attempts to modify external aspects of the environment. This strategy involves in some way modifying the situation (i.e., stimulus) that produces an emotional reaction, subsequently changing its emotional influence.

- **Attention deployment** refers to the process in which an athlete directs attention to influencing the emotions. By controlling attentional processes (e.g., worry and distraction) one may up- or down regulate emotional responses, (e.g., listening to music with headphones, to avoid listening to the crowd in a big competition).

- **Cognitive change** involves efforts at changing the meaning or the frequency of thoughts about a particular situation, subsequently, modifying an emotional response. This affect could be about a specific instance, for example, a handball player failing to score a penalty may reappraise the extent of self-blame by saying “it was a good penalty, but a really good save by the keeper”. Cognitive change doesn’t only apply to a specific instance, it might also be the competition in general. Athletes can display different psychological and physiological responses prior to a competition depending on whether it’s viewed as a challenge rather than a threat (Jones, Meijen, McCarthy, & Sheffield, 2009).

In addition to the antecedent focused strategies there is a response focused emotion regulation strategy, which occurs after the generation of emotion (Gross & Thompson, 2007). The aim of the strategy is to either reduce or tolerate the experience and expression of emotion, this strategy is referred to as response modulation. The strategy specifically involves attempts to influence emotional response tendencies (i.e., the intensity and/or duration of one’s emotional experience and associated expression). Examples of response modulation may be exercise and relaxation used to decrease physiological and experiential aspects of negative emotions (Gross & Thompson, 2007).

**Psychological skill training**

A major research line within sport psychology concerns performance-enhancing procedures. Practitioners have focused on psychological skills (i.e., self-regulation strategies), with an emphasis on creating or enhancing certain psychological aspects in the athlete, such as attentional focus, confidence, and optimal arousal. All aspects which are presumed facilitating to optimal performance and physical skill development (Gould et al., 1992; Orlick & Partington, 1988).
Psychological skill training, also known as mental skills training procedures, have been the primary intervention approach for sport psychologists aiming at enhancing athletic performance for well over three decades (Gardner & Moore, 2006). Hardy, Jones, and Gould (1996) suggest that psychological skills are effective for attaining optimal athletic performance.

Early psychological skill training focused on the use of correlation studies, leading sport psychologist to the belief that successful performers are less anxious, more confident, and less prone to experience negative thoughts (Gould, Eklund, & Jackson, 1992; Orlick & Partington, 1988). Based on this research early sport psychologist adopted clinical self-regulatory approaches to enhance performance among athletes. Traditional performance enhancement techniques such as goal-setting, imagery, self-talk, and arousal regulation were implemented (Gardner & Moore, 2006). These techniques are believed to help athletes achieve consistently high performance and peak performance states (Hardy et al., 1996). The procedures of psychological skill training have historically been based upon a coping model, which hypothesize that providing skills to enhance self-control allows an individual to more effectively respond to and cope with high stress situations (Moore & Gardner, 2011). Based upon existing research in clinical psychology which has challenged the concept that internal experiences need to be controlled or lessened to enhance psychological functioning (Hayes, Strosahl, & Wilson, 1999), newer acceptance based models of performance enhancement have been developed. The aim of these models are to promote a modified relationship with internal experiences such as cognitions, sensations, and/or emotions rather than aiming at changing their form of frequency (Gardner & Moore, 2007).

It is often considered that the difference between athletes achieving highly desired performance states, and those who do not is the use of self-regulatory techniques that enhance the specific variables facilitating performance excellence (Gould et al., 1992; Hardy et al., 1996). Researchers and practitioners have studied and used these self-regulatory techniques, among athletes ranging in both age and skill level (Orlick & Partington, 1988).

There is a significant amount of empirical studies supporting the concept that high skilled athletes use psychological skills to perform well, and that more skilled athletes report a greater use of psychological skills (Hayslip, Petrie, MacIntire, & Jones, 2010; Thelwell, Greenlees, & Weston, 2009). Early studies attempted to identify psychological skills that reliably differentiated skilled and less skilled athletes, using self-reported methods (e.g., interviews). For example, Orlick and Partington (1988) conducted interviews/gathered surveys for 235 athletes of the 1984 Olympic Games, regarding factors perceived to be affecting their psychological readiness to compete. They found that Olympic medallists were using pre-performance routines prior to the competition, such as positive self-talk and relaxation techniques to prepare themselves emotionally. The medallists also used a pre-competition plan, a competition focus plan, and a plan for dealing with distractions. Heishman and Bunker (1989) found that despite 81% of elite athletes from various
countries considering mental preparation as important, merely 44% frequently used mental preparation strategies and techniques.

Considerable scientific evidence supporting the efficacy of traditional psychological performance-enhancement methods is available, however some authors suggest that sport psychology interventions have not been critically examined, and that most studies investigating the efficacy of psychological skill training do not meet the criteria for evidence-based empirical support (Gardner & Moore, 2006). Gardner and Moore (2006) suggest that sport psychology have relied on anecdotal reports, case studies and single-subject designs without a direct control comparison, and analogue studies, and the results of these studies have often been interpreted as support for self-regulatory performance enhancement procedures. Gardner and Moore (2006) propose that randomized controlled between-group and single-case designs with intervention comparison should be used to determine the efficacy of certain intervention procedures and strategies. Gardner and Moore (2006) also highlight the potential dangers of less methodologically rigorous approaches to research. They suggest that misinterpreted correlation data (and anecdotal reports) may lead to problematic conclusions misguiding the practitioner, and subsequently providing false hope to the client (Gardner & Moore, 2006).

**Emotional regulation training**

Emotion science have grown immensely in recent years, particularly, the concept of emotion regulation, and the strategies used to support such regulation have received a great deal of theoretical and empirical attention (Gross & Thompson, 2007). The present research on emotion regulation has its roots in the study of different areas, psychological stress and coping (Lazarus, 1993), attachment theory (Ainsworth & Bowlby, 1991), and emotion theory (Frijda, 1988). Much of the existing research in emotion - performance employ a nomothetic (group-oriented) model, which emphasizes general principles of behaviour derived from studying groups, thus they are hardly applicable to individual athletes (Robazza & Bortoli, 2004). Recently researchers however have begun to adopt an idiographic perspective, with the aim of making predictions about individuals or subsets of athletes (Woodcock, Cumming, Duda, & Sharp, 2012; Robazza, Pellizzari, & Hanin, 2004; Robazza et al., 2008).

Through research within a range of research designs (e.g., qualitative research, single-subject, prospective studies, experimental research) emotional regulation has been linked to several important outcomes, such as mental health (Gross & Muñoz, 1995), social functioning (van Middendorp, Geenen, Sorbi, Hox, Vingerhoets, Doomen, & Bijlsma, 2005), and influencing performance and well-being of athletes (Eccles, Ward, Woodman, Janelle, Scanff, Ehrlinger, Castanier, & Coombes, 2011). Emotion regulation may also influence individuals overall personality, the findings of Baumann, Kaschel, and Kuhl (2006) indicate that emotion regulation may promote coherence and long-term stability within the overall personality system.

**Cognitive change.** There are several different strategies that may be used by practitioners to assist athletes in changing cognitions associated with an emotional
response. Reappraisal involves reinterpreting a stimulus in ways that alters its emotional “meaning”, and may be used to heighten or augment an emotional response (Uphill et al., 2009). Reappraisal strategies focus on altering one’s emotional experience by changing thoughts, whereas expressive suppression is a response-focused strategy focusing on inhibiting outward displays of emotion. Reappraisal strategies have been associated with more adaptive coping and well-being outcomes, whereas suppression appears to consume more cognitive resources and relate to poorer social and psychological functioning (van Middendorp et al., 2005).

In a recent meta-analysis of the effectiveness of emotion regulation strategies by Webb, Miles, and Sheeran (2012), the effectiveness of re-appraisal as an emotion regulation strategy was emphasised. Specifically, changing the interpretation of a situation so that success was more likely to be the outcome, was reported as an effective emotion regulation strategy. For example, an athlete engaging in self-talk trying to strengthen her beliefs that she will perform successfully during a competition could help the athlete manage her emotions. Webb et al (2012) also report support for the effectiveness of re-appraising the emotional experience. For example perceiving high intensity anxiety as a sign of readiness, rather than trying to reduce the intensity experienced.

Attempting to suppress thoughts associated with emotions is an appealing strategy, although it may have paradoxical effects, especially under the intense cognitive load of competitive sport, the thoughts themselves may intensify the emotions (Wegner, 1994). For example a conscious attempt to suppress thoughts related to anger, may instead result in greater attention being directed towards anger-related cues. Efforts to reduce thoughts associated with emotion might also intensify the physiological arousal (Wegner, 1994). Accordingly, strategies designed to inhibit emotions eliciting may be more effective than attempts to modulate emotional responses. Strategies designed to influence athletes’ appraisal of specific situations seem adaptive at changing the experiential, physiological and expressive dimensions of emotions, compared to suppression that appears to confer both physiological and cognitive costs.

At least two types of imagery may be associated with a more adaptive emotional state. Motivational general master imagery represents effective coping and mastery of situations, motivational general arousal imagery involves images of stress, arousal and anxiety in relation to competition (Martin, Moritz, & Hall, 1999). The use of both types of imagery have been found effective in reducing stress and enhancing self-efficacy in athlete, before and during performance (Jones, Bray, Mace, MacRae, & Stockbridge, 2002).

Self-talk as a motivational tool to regulate arousal, relaxation and “psyching up” is used frequently by athletes, and has been widely acknowledged (e.g., Hardy, 2006; Hardy, Gammage, & Hall, 2001). According to Jones (2003), self-statements may alter emotional states in two ways: by replacing a maladaptive thought with a positive or neutral statement, a stimulus that may result in a negative emotional state is removed; or by using self-statements as a stimuli to generate an appropriate emotional state. Combined with other techniques (e.g., relaxation training), positive
self-statements have been used to stimulate a more positive perception of anxiety (Hanton & Jones, 1999), and to reduce levels of anxiety (Prapavessis, Grove, McNair, & Cable, 1992).

Uphill and Jones (2005; 2007) suggest that multimodal interventions based on these strategies (i.e., self-talk, imagery, and reappraisal) have shown efficacy in assisting athletes in emotion regulation and/or enhancing performance. Given the evidence available in the area, practitioners ought to use strategies that affect the appraisal of the situation to create the most appropriate state for competition, rather than suppressing unwanted emotions, prevention is better than cure (Uphill et al., 2009).

**Attention regulation training**

Evidence supporting the importance of concentration comes from at least three sources. Reviews of research on athletes “flow states” and peak performance experiences in sport highlight the importance of total absorption in the task at hand to perform (e.g., Harmison, 2006). Second, a growing amount of evidence is appearing regarding the link between athletes’ focus of attention and the quality of their performance (see Wulf, 2007 for a review). Wulf (2007) concluded that an external focus of attention (in which the athlete direct their attention at the effects their movements have on the environment) is usually more effective than an internal (in which the performer focus on their own body movements). This conclusion seems to apply across a range of tasks (e.g., jumping, golf, American football), levels of experience (i.e., whether the performers are experts or novices), and participant population. Finally, a variety of anecdotal testimonials and sporting incidents emphasise the significance of focusing skills in determining athletic performance. For example many of the highly successful athletes participating in Orlick and Partington’s (1988) study felt that they could have reached the top much sooner if they had worked on strengthening their mental skills earlier in their careers, and that it was not until their focusing skills were refined that their dreams became a reality.

Sport psychology researchers have developed a variety of practical strategies aiming at enhancing concentration skills in athletes, such as goal-setting, imagery, and self-talk.

**Goal setting.** Psychologists (e.g., Weinberg & Gould, 2010) usually distinguish between result goals (e.g., the outcome of a sporting event), performance goals (specific end products of performance that lie within the athlete’s control, such as trying to have a passing percentage with over 70 per cent accuracy in football), and process goals (specific behavioural actions necessary to achieve a goal, e.g., focusing on teammates position to increase passing accuracy). Some sport psychologists suggest that performance goals may increase athletes’ concentration skills (Moran, 2009). Theoretically this theory seems reasonable, since performance goals encourage the athlete to focus on task relevant cues and controllable actions (Moran, 2009). Empirical support indicates that focusing explicitly on performance goals when performing is associated with optimal performance, whereas focusing on result goals is associated with inferior performance (Jackson & Roberts, 1992).
Self-talk. Athletes talking to themselves covertly during competition is common, usually in an effort to motivate themselves. This silent cognitive activity, or “self-talk”, may involve praise (e.g., “good job, well played!”), criticism (“that’s awful, you idiot!”), and/or instructions (“throw the ball high in the air” (Moran, 2009). Research have shown that the utilization of performance enhancement techniques (i.e., self-talk and imagery) may enhance performance in a golf putting task (Peluso, Ross, Gfeller, & LaVoie, 2005). According to Tod, Hardy, and Oliver (2011) the existent evidence base show that self-talk has beneficial effects on cognition (in particular, concentration and focus-related variables). Rushall (1989) suggest that three types of self-talk statements are especially helpful to athletes, first, “task-relevant” statements may be helpful in triggering correct technique, e.g. athletes may use cue words such as “low to high” to remind themselves to swing the racket from low to high to hit a solid backhand drive in tennis. Second, “mood words” may be used to evoke images of certain movements that are necessary for skilled performers (e.g., a sprinter might say “explode” to make sure he gets off the starting block well (Weinberg & Gould, 2010). Finally, “positive self-statements” can be used to encourage a performer (e.g., “hang in there, get though”). Landin and Herbert (1999), found that tennis players who had been trained in using instructional cues or trigger words (e.g., “split, turn”), attributed their improved performance to enhanced concentration on court. Hatzigeorgiadis, Theodorakis and Zourbanos (2004) encouraged their participants’ to use instructional self-talk (e.g., “ball, target”) in an effort to concentrate on the important cues of the execution of an open skilled (i.e., water-polo ball throwing). Their results show that the use of instructional self-talk not only improved performance, but also decreased the occurrence of disturbing thoughts among the players concerned.

In conclusion, previous research indicate that elite athletes use psychological skills to be able to perform, and that psychological skills training is effective in enhancing performance in athletes. Research also show that the use of emotion regulation is linked to several important outcomes. Accordingly, working with psychological skill training with the aim of enhancing emotion and concentration regulation should have several beneficial outcomes for an athlete. In a previous study (Olausson & Vallmark-Jansson, 2013) including participants of the present study results showed that there is a relationship between emotion, concentration and performance in the team. Naturally the next step was to work with the athletes of the team, with the aim of enhancing certain psychological aspects (i.e., concentration and emotion regulation) and performance.

Subsequently, the objectives of the present study were: (1) To examine idiosyncratic profiles of emotions and performance of 3-4 leading handball team players in successful and less successful games and identify their strengths and limitations in emotion-concentration regulation; (2) To develop, implement, and evaluate an intervention program aimed at optimizing the players' emotion-concentration regulation and performance.
Method

Research Design

Table 1 presents the study design, including the objectives, method, and structure of the study.

Table 1
The study design

<table>
<thead>
<tr>
<th>Objectives of the study</th>
<th>Methodology used</th>
<th>Structure (major steps) in each stage</th>
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| (1) To examine idiosyncratic profiles of emotions and performance of 3-4 leading handball team players in successful and less successful games and identify their strengths and limitations in emotion-concentration regulation | Mixed method repeatable measurements design to collect data and identify the player’s deficits in emotion-concentration regulation. | 1. Data collection in a series of 10 games.  
2. Analysing quantitative data.  
3. Data collection in individual semi-structured interviews.  
4. Data treatment of quantitative and qualitative data.  
5. Development of each players idiosyncratic profiles exhibiting their strengths and limitations. |

| (2) To develop, implement, and evaluate an intervention program aimed at optimizing the players' emotion-concentration regulation and performance. | Development, implementation and evaluation of the intervention program. | 1. Development and formulation of intervention goals.  
2. Development of intervention program.  
3. Implementation of intervention program in four sessions.  
4. Session 1 - Introduction and goal-setting  
5. Session 2 - Concentration regulation  
6. Session 3 - Emotion regulation  
7. Session 4 - Evaluation of the intervention program through interviews. |

Participants

The sample of the study was a convenience sample. The participants were 4 handball players from the team that was involved in developing and testing the ECPP(H). One of the players is a goalkeeper, and the remaining three outfield players. The team comes from a city located in the South-Western part of Sweden. The participants’ age ranged from 20 to 28 (m = 24.5 ± 2.65). One participant decided to drop out of the study after the first session, the study results, and procedures will be presented for the three remaining participants.

Instruments

The ECPP(H) was developed to measure three variables for a competitive situation; emotional intensity of 13 different emotions, frequency of concentration for four items, and a self-evaluated performance report. The instrument is divided into two main parts (i.e., first half and second half) both which are conducted at the same time (i.e., within 20 minutes after the game has ended). The athlete is to conduct the
survey one time regarding the first half of the game as well as one time regarding the second half of the game. The two parts involves the same sections; one emotion list, one section with four items measuring concentration frequency and one part where the athlete evaluates individual performance as well as the team’s performance. The instrument is presented in appendix 3.

The instrument also involves one time-out part for each half (i.e., one for first half and one for second half). The time-out part also consists of the three sections measuring each variable (i.e., emotion, concentration, and performance). The items in the emotion section as well as the concentration section are identical to the rest of the instrument for the time-out part. The performance section differs from the rest of the instrument. In the performance section of the time-out part the athlete is to report whether he or she experienced that the time-out had any effect on the individual as well as team performance, by answering three items regarding to which extend the athletes/teams performance was influenced by the time-out. From here on each section of the instrument will be described in detail as to how it is to be conducted in and what it measures.

The emotion section consists of a list of different emotions. The emotions are not divided by hedonic-tone; they are presented in a random order. The list consists of emotions experienced both as pleasant and unpleasant. The athlete is to rate to which intensity he or she experienced the specific emotion during the time-zone described in the survey. Each emotion is rated on a scale from one to ten, with one representing a low intensity and ten representing a high intensity.

The concentration section consists of four positively formulated statements. The athlete is to report to which frequency it was perceived that he or she (1) succeeded in remaining focused on the present, (2) managed to concentrate on information which is perceived as relevant to performance, (3) to which extend he or she managed to deal with and discard of distractions and (4) to which extend the athlete succeeded in regaining focus when necessary. Each statement is to be rated on a scale from one to ten, where one represent a low frequency of concentration (i.e., rarely succeeded) and ten represent a high frequency of concentration (i.e., often succeeded).

The performance section of the instrument consists of two items. The first item concerns to which extend the athletes experienced that the team’s performance corresponded to the expectations regarding the team’s performance. The second item reports to which extend the athlete perceived that his or hers individual performance corresponded to the individuals expectations regarding the performance. Both of the items are rated on a scale from one to ten. One represent that the athlete/team corresponded poorly with the expectations and ten represent that the athlete/team corresponded well with the expectations.

The performance section for the time-out part involves three items. The first item concerns to which extend the athletes managed to carry out the instructions the coach gave during the time-out. In the second item the athlete rates improvement of the individual performance after the time-out. The third item measures to which
extend the athlete perceives that the team improved their performance following the time-out.

**Gathering quantitative data using the ECPP(H).** The first step when working with an IZOF framework is to identify an athlete’s optimal zone and non-optimal zone (Hanin, 2000). To assist with this process quantitative data was gathered in a series of four games using the ECPP(H). The distribution of the instrument was managed by the coach, and participants completed the survey inside the locker-room after each game. As the participants were familiar with the instrument the researcher was not present during the games. If questions were to arise, contact information was available on the front page of the instrument, so that the participants could contact the researcher. To ensure confidentiality, each participant used an individual id code, known only by the research and the participant. The surveys were collected in sealed envelopes, the data collected was stored in a sealed box by the researcher. Ex post facto data from a total of six games collected in a former study with the team (Olausson & Vallmark-Jansson, 2013) was also used in the present study.

Once data had been collected, each participants best performance and worst performance were identified, based on the individual performance. The mean values for each variable measured in the ECPP(H) was documented and brought to the individual interviews.

**Interview guide.** Individual semi-structured interviews were conducted with each participant with the purpose of identifying the individuals’ strengths and limitations in emotion and concentration regulation. The interviews were conducted at the teams’ facilities and took approximately 25 minutes. Before the interview the participants were informed of the ethical aspects taken into consideration (confidentiality and the right to abort their participation in the study). The interview included a discussion on the participant’s best performance and worst performance. This included: (1) discussion on the dynamics of first and second half in each of the games. (2) discussion on the differences in emotions between the games. (3) discussion on the differences in concentration between the games. To encourage the participant’s reflection on her functional and dysfunctional zones, the participant was presented with the mean values of the games from the quantitative data collected. The participants were informed of the meaning of each value, and asked to reflect on the differences exhibited comparing the games.

Then, general questions regarding the individual’s emotion and concentration regulation were asked (see appendix 5). The questions included four different themes: (1) which components affect performance, and how does these components affect performance? (2) Crucial/difficult time periods of the game. (3) Current strategies for regulating emotions and concentration. (4) Most important aspects of emotion and concentration to work with. Data were collected (i.e., documented by a recording device), and later analysed.

**Procedure**

**Contact.** Participants were contacted during an external workshop with some of the players in the team. The participants were informed of the purpose, structure, and ethical issues taken into consideration in the study. E-mail addresses of those
interested in participating was collected. Those interested were then contacted through e-mail, with a more detailed description of the purpose and structure of the study. If still interested, participants were asked to suggest a time appropriate to conduct the individual interview, and discuss the future intervention.

**Ethical issues.** Participants of the study were informed about the purpose, structure and ethical issues taken into consideration, and were given the opportunity to participate. It was emphasized that participation in the study was voluntary, and that participants at any time could decide to cease their participation in the study without an explanation. Participants were informed of the confidentiality of the study, no information that could be linked to the individual would be published. During the collection of quantitative data, the participants used an id code to ensure anonymity. Participants were informed of the ethical issues taken into consideration on the first page of the instrument (see appendix 2). In the interview participants were verbally informed of the ethical issues once again. In written form, participants were informed of the structure of the intervention, the content of the sessions, and the ethical issues taken into consideration during a session, and asked to sign a consent for their participation in the intervention study (see appendix 4).

**Organization of intervention.** The intervention sessions were conducted in a group including the three participants. The first session was conducted at the university facility, and took approximately 1 hour and 20 minutes. The second session was conducted at the team’s facility, and took approximately 1 hour and 30 minutes to complete. The third session was conducted at the university, and took approximately 1 hour and 25 minutes to complete. The final session, and the evaluation of the intervention was conducted at the university, each interview took approximately 15 minutes.

**Data analyses and intervention program.**

**Development of each participant’s emotion performance profile.** The data were analysed using the Statistical Package for the Social Sciences [SPSS] version 20. The program was used to calculate descriptive statistics (i.e., means and standard deviation) of the games. To develop the participant’s emotion-performance profile, emotion and performance data were extracted from the ECPP(H). Each participant’s best and worst performance were identified based on their own subjective performance rate. Each variable (i.e., each item in the ECPP(H)) of the first and the second half was computed to construct a new variable. For example the value of confidence in first and second half (i.e., the variables Confident1half and Confident2half) was integrated to a new variable reflecting the mean value of the game (i.e. the variable confidentbestperformance). This procedure was conducted for each variable. The values were used to assist the participants in determining the intensity of their emotional experiences accompanying the best and worst performance. Participants were asked to identify the hedonic tone (i.e., pleasant or unpleasant), and the functionality (i.e., functional or dysfunctional) of each emotion during session 3, the procedure is described in detail in the results section of the paper. Each participant’s emotion-performance profile is presented in Figures 1 – 3.
Development of each participant’s idiosyncratic profile of strength/limitations in emotion and concentration regulation. The data analysis process for the construction of each individual’s idiosyncratic profile of strength/limitations in emotion and concentration regulation composed three cyclical stages. First, the interview was transcribed, read and re-read to promote a high level of familiarity with each individual’s strengths and limitations. Second, recurring statements from the interview were extracted and categorised into strengths and limitations. Third, the findings (i.e., statements) were reflected on by the author and a strength or limitation was formulated based on the participants quotations (included in the tables). Each participants strengths/limitations profile was constructed, and is presented in tables 2 – 4.

Formulating goals. Idiosyncratic data (i.e., idiosyncratic profile of strength/limitations in emotion and concentration regulation) for each participant was used to develop each individual’s intervention goals. As several similarities were exhibited in the participant’s goals, the participants were integrated into a small group for the intervention, also acknowledging the idiosyncratic characteristics of each participant. The intervention goals of the participants were combined into two group intervention goals, presented in Table 5.

Development of the content of the intervention. Based on the intervention goals, appropriate exercises and content of each session were identified using literature. Content of the intervention is presented in Table 6.

Evaluation of the intervention. To evaluate the intervention semi-structured interviews were conducted with each participant (the procedure is described in detail in the result section, session four). The procedure composed four cyclical stages. First, the interviews were transcribed, read and re-read to promote a high level of familiarity with the text. Second, sentences or segments (i.e., raw data unit) involving information relevant to the issues (i.e., evaluate the effectiveness of the intervention) were extracted. The raw data units with the same meaning were identified and integrated into a code, which was labelled and numbered based on the raw data units behind it in the bracket. The three categories of the analysis for the intervention already existed in the interview guide. The themes were formulated inductively based on raw data from the interviews (see Figure 4).

Results

The findings of the study are presented in three different sections. First, the emotion-performance profiles are presented. Second, the participants’ idiosyncratic profiles of strength/ limitations in emotion and concentration regulation profiles are presented. The intervention goals of each participant is presented, followed by the combined goals of the intervention (presented in Table 5). Finally, the development and implementation of the intervention is presented, including the evaluation process, and the results of the evaluation.
Emotion-performance profiles.

In this section each participant’s emotion performance profile is presented. Figure 1, 2, and 3, report the individually functional and dysfunctional emotion descriptors generated by participants A, B, and C, describing their experiences in best/worst performance of the quantitative data gathered throughout their season. To interpret the figure, the dot which is in line with the first letter of the word presents the result of the specific emotion.

Figure 1: Emotion-performance profile participant A

The emotion-performance profile of the participant exhibits exclusively unpleasant dysfunctional and pleasant functional emotions. No unpleasant functional or pleasant dysfunctional emotions are exhibited. The results show that several emotions experienced as unpleasant are considered dysfunctional to performance, and also show a higher intensity in worst performance (with the exception of tired). Emotions experienced as pleasant are considered functional to performance, and show a higher intensity in best performance
The emotion-performance profile of the participant exhibits three of the emotion categories proposed by the IZOF model. Several unpleasant emotions are considered dysfunctional to performance, and also show a higher intensity in the worst performance. Nervous is experienced as unpleasant but still perceived as functional to performance. Several emotions experienced as pleasant are considered functional to performance, and also exhibit a higher intensity in the best performance. No emotion experienced as pleasant is considered dysfunctional to performance.
The emotion-performance profile of the participant exhibits only unpleasant dysfunctional and pleasant functional emotions. Several unpleasant emotions are considered dysfunctional to performance, and show a higher intensity in the worst performance (with the exception of stressed). Several emotions experienced as pleasant are considered functional to performance, and also exhibit a higher intensity in the best performance. No emotion experienced as pleasant is considered dysfunctional to performance.

In conclusion the participants’ emotion-performance profiles are similar in several aspects. No emotions experienced as unpleasant are considered functional to performance. There is a high intraindividual variability in the participants’ emotion performance profiles regarding intensity of emotions exhibited in best and worst performance. The profiles are well coordinated with the IZOF models prediction of a high intensity of functional emotions and a low intensity of dysfunctional emotions accompanying a successful performance. The profiles also exhibit some interindividual variability, both regarding functionality and intensity of emotions.
The next section will present the preparation of the intervention program. Before the intervention program could be developed, identifying the strengths/limitations of the participants’ was required. This was done using data from the first interview conducted with the participants (see “Development of each participant’s idiosyncratic profile of strength/limitations in emotion and concentration regulation”).

**Idiosyncratic profiles of strengths/limitations in emotion and concentration regulation.** Each participant’s idiosyncratic profile of strengths/limitations in emotion and concentration regulation is presented in this section to clarify the specific needs of each participant. The profile includes the participant’s strengths and limitation component identified. The strengths and limitations are based on actual quotations of the participants’, the quotations have been extracted and translated from the first interview conducted. The quote (in quotation marks) which the specific strength/limitation is based on is presented beneath each component (i.e., strength/limitation).

### Table 2

**Idiosyncratic profile of strength/limitations in emotion and concentration regulation:**

<table>
<thead>
<tr>
<th>Participant A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>Scoring goals enhance energy</td>
</tr>
<tr>
<td>“As soon as I score I get so damn energetic.”</td>
</tr>
<tr>
<td>Strategy for regaining focus – narrow down focus to a single player</td>
</tr>
<tr>
<td>“It usually helps me just excluding the stands and excluding the bench.”</td>
</tr>
<tr>
<td>Consistent routines</td>
</tr>
<tr>
<td>“I have almost exactly the same routines”</td>
</tr>
<tr>
<td>When experiencing high nervousity:</td>
</tr>
<tr>
<td>If performing well it is functional</td>
</tr>
<tr>
<td>“Well, if I do something well in the beginning, this first fifteen minutes, then I just feel I, yes but this is after all a blast, then let’s go.”</td>
</tr>
<tr>
<td>High emotional intensity</td>
</tr>
<tr>
<td>“I probably need that, to get a lot of emotions in my body to be able to perform.”</td>
</tr>
<tr>
<td>Physical contact and resistance</td>
</tr>
<tr>
<td>“I probably need that roughness to get going, or body, I mean body contact I think.”</td>
</tr>
<tr>
<td>Self-confidence</td>
</tr>
<tr>
<td>“If I get confidence, believe in myself, then I can do anything.”</td>
</tr>
<tr>
<td>Tired</td>
</tr>
<tr>
<td>“No, tired I’m influenced by a lot I think, negatively.”</td>
</tr>
</tbody>
</table>
Table 3

*Idiosyncratic profile of strength/limitations in emotion and concentration regulation:*

*Participant B*

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highly motivated and determined</strong>&lt;br&gt;“The others think I’m kind of, well motivated and determined.”</td>
<td><strong>Tend to think too much, leading to irrelevant focus</strong>&lt;br&gt;“I start thinking too much. So if, if you let some balls pass, then you start thinking, what did I do now, how should I do to save the next ball.”</td>
</tr>
<tr>
<td><strong>Apply positive self-talk</strong>&lt;br&gt;“You kind of just stoked yourself and just damn you are so good instead.”</td>
<td><strong>Experience psychological fatigue decreasing concentration</strong>&lt;br&gt;“And then tired, well it’s more that you, I get tired in my head kind of. But it’s kind of just because you focus a lot.”</td>
</tr>
<tr>
<td><strong>No specific time period is more difficult, more dependent on performance (momentum)</strong>&lt;br&gt;“Well here you kind of just thought that it was bad, I’m not saving any shots and it doesn’t matter what I do because I won’t save it anyways, so you feel inferior. And here it was the complete opposite, well there I saved the shots.”</td>
<td><strong>Tend to lose focus</strong>&lt;br&gt;“You can actually just stand there thinking about something else, and then all of a sudden oh, it’s here I am, now you have to focus on this. So I guess it is that I can, sort of sometimes drift away.”</td>
</tr>
<tr>
<td><strong>Excitement</strong>&lt;br&gt;“Specifically this with excitement, how I excite myself, and well then I get sort of determined, well that’s the ones I think are the most important for me to be able to perform well.”</td>
<td><strong>Becomes too excited</strong>&lt;br&gt;“In that case it is that I can get too excited, that I might get too excited sometimes.”</td>
</tr>
<tr>
<td><strong>Focusing on relevant cues</strong>&lt;br&gt;“I guess it is specifically focus, I try to think about that all the time, focus on the ball.”</td>
<td><strong>No conscious strategies for regulating emotions or concentration</strong>&lt;br&gt;“No.”</td>
</tr>
<tr>
<td><strong>Motivation, joy and determination</strong>&lt;br&gt;“But I do think motivated and joy is important as well. So I guess they are pretty close to each other, motivation and determination.”</td>
<td><strong>Apply negative self-talk</strong>&lt;br&gt;“Although that was very negative, I mean there you were thinking that you’re not saving it anyways, or kind of like that. You felt you had no chance.”</td>
</tr>
<tr>
<td><strong>Dissatisfaction</strong>&lt;br&gt;“Dissatisfied perhaps.”</td>
<td><strong>Dissatisfaction</strong>&lt;br&gt;“Dissatisfied perhaps.”</td>
</tr>
<tr>
<td><strong>Irritation may be dysfunctional</strong>&lt;br&gt;“Irritated, or sometimes, often, and when I make it into something negative then it really doesn’t work well. Sometimes you may get irritated and do something positive as I said earlier. It’s specifically when you are in the wrong mood haha, and get irritated and just lower yourself. It is that I would like to improve.”</td>
<td></td>
</tr>
</tbody>
</table>
The strengths/limitations profiles present the specific needs of each participant. Based on these needs each individual’s intervention goals were developed representing what the participant would work with during the intervention program. The next section will describe each step in the development, implementation and evaluation of the intervention.

### Development of the intervention program aimed at optimizing the players' emotion-concentration regulation and performance.

The first step in the development of the intervention was to develop intervention goals for each participant. As several similarities in the participants individual goals were exhibited, the goals were integrated to two separate intervention goals for the group (see Table 5).
Table 5
The intervention goals

<table>
<thead>
<tr>
<th>Individual goals</th>
<th>Integrated goals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participant A</strong></td>
<td></td>
</tr>
<tr>
<td>- Improving emotion regulation – managing irritation and self-confidence.</td>
<td>1. Improve emotion regulation skills.</td>
</tr>
<tr>
<td>- Improving ability to refocus and maintain focus (focusing on first 15 minutes of the game).</td>
<td>2. Improve concentration skills, including ability to refocus and ignore irrelevant distractions effectively.</td>
</tr>
<tr>
<td><strong>Participant B</strong></td>
<td></td>
</tr>
<tr>
<td>- Improving emotion regulation – managing irritation, and increasing the frequency of positive self-talk.</td>
<td></td>
</tr>
<tr>
<td>- Decreasing occurrence of loss of focus due to distractions, and improve ability to regain focus.</td>
<td></td>
</tr>
<tr>
<td><strong>Participant C</strong></td>
<td></td>
</tr>
<tr>
<td>- Improving emotion regulation – Managing self-confidence, motivation, irritation and dissatisfaction.</td>
<td></td>
</tr>
<tr>
<td>- Improving ability to ignore irrelevant distractions and improve ability to regain focus.</td>
<td></td>
</tr>
</tbody>
</table>

Based on these goals, the intervention program was developed and implemented. The intervention program lasted four weeks, and included four separate sessions, after each session the participants were asked to perform some kind of daily task/mental training technique (i.e., “homework”). In Table 6 the design of the intervention is described.
### Table 6
The intervention content

<table>
<thead>
<tr>
<th>Session</th>
<th>Theme</th>
<th>Purpose</th>
<th>Content &amp; activities</th>
</tr>
</thead>
</table>
| 1       | Introduction to mental skills training & goal-setting | (1) Increase participants awareness of their own individual deficits and strengths; (2) Facilitate the participants’ understanding of mental skills training in sport; (3) Facilitate the participant’s understanding of goal setting and its relationship with performance, emphasising the importance of focusing on process goals in association with competition; and (4) introduce participants to the usage of imagery as a homework (i.e., daily implementation of morning imagery) | a. Introduction: Participants were introduced to basic knowledge on mental skills training, goal-setting and imagery and encouraged to share their own experience and discuss the topics.  
b. Exercise: Participants were asked to develop a number of process goals, and discuss the exercise.  
c. Homework: Participants were asked to on a daily basis use imagery, and document their mental skills training progress in a journal. |
| 2       | Concentration                 | (1) Facilitate the participants’ understanding of the relationship between concentration and performance. (2) Supply participants with the means to enhance probability of achieving enhanced/optimal concentration | a. Introduction: Participants were introduced to the different components of concentration, and encouraged to reflect and discuss the attainment and importance of optimal concentration.  
b. Exercise: The thought stopping technique (Hassmén, Kenttä, & Gustafsson, 2009).  
c. Exercise: Participants developed a refocus profile, in which they identified possible distractors and developed strategies to cope with them (American Coaching Effectiveness program, 1989).  
e. Homework: Participants were encouraged to practice thought stopping and the strategies they developed in practice/competition. |
| 3       | Emotion regulation            | (1) Facilitate the participants’ knowledge on the effective use of emotion regulation to enhance performance. (2) Assist the participants in identifying emotions which are either functional or dysfunctional to performance. (3) Introduce participants to the use of relaxation techniques to regulate emotions. (4) Facilitate the participants’ knowledge on the importance and effective usage of self-talk (in particular reframing), and to enhance participants’ ability to use constructive and facilitative self-talk. | a. Introduction: Participants shared and discuss their knowledge on emotion regulation.  
b. Exercise: Construction of the participant’s individual emotion performance profile (Hanin, 2000).  
c. Exercise: Breathing exercise.  
d. Participants shared and discuss their own knowledge on self-talk, and were introduced to some basic knowledge within the area.  
e. Exercise: combining imagery, and reframing to help participants achieve a greater understanding for the usage of re-framing as a tool to regulate emotions (American Coaching Effectiveness program, 1989).  
f. Exercise: role-playing two different situations to illustrate how self-talk may alter the behaviour of athletes (Gould, 2001).  
g. Homework: Participants were reminded to continue with their mental training exercises, and to document their progress in their mental training journal. |
| 4       | Evaluation                    | (1) Evaluate the effectiveness of the intervention                      | a. Semi-structured interviews with each participant.                                                                                                                                                                 |
Each session is described in detail in the next section, first the content of the session is presented, followed by the researcher’s personal reflections regarding each element of the session. Certain exercises include different instructions for some participants (depending on their intervention goals), if specific instructions occur, it will be mentioned.

**Implementation of the intervention program.**

**Session 1: Introduction and goal setting.**

*Content of the session.* To facilitate the participants’ awareness of their own individual deficits and strengths, they were handed their idiosyncratic profiles of strengths/limitations in emotion and concentration regulation and the intervention goals. They were asked to examine the profile, ask questions if they had any, and emphasise if there was any content which they considered inaccurate with their own personal opinion, and also reflect on the profile. The session continued with an introduction about the structure of the intervention program (i.e., four sessions), and the sessions (i.e., introduction/discussion, exercise, homework).

Introduction/discussion about mental training, included: (a) discussion on the participants’ experiences of mental skills training in sport, (b) what mental training is, (c) what mental training isn’t, and (d) why and how mental training should be utilized.

After the introduction on mental training, a similar introduction about goal-setting followed, including: (a) participants sharing their experience and usage of goal-setting in a discussion. (b) brief introduction about the three different types of goals (i.e., outcome goals, performance goals, and process goals) and the effective use of each. (c) further information on the effectiveness of process goals, and the importance of focusing on process goals in association with performance, and (d) discussion on the importance of process goals, what process goals do the participants currently use, want to improve, and or find important.

The participants were then introduced to an exercise. They were to choose three situations/elements/components considered fundamental to achieve successful performance, and set three process goals for each (an example of a process goal documentation is presented in Appendix 5). Once each participant completed the exercise, they were encouraged to reflect and discuss on how the knowledge gained from the exercise may translate into practical implications for them personally to improve performance.

To end the session, the participants were introduced to the session’s homework, imagery. The description of the task included: (a) Participants sharing their experience and knowledge of imagery. (b) A brief introduction to the usage of imagery, tips and pointers to effective imagery. And (c) participants were assigned the task of using morning imagery as a daily routine. They were to visualise images of themselves performing successful behaviours, and experiencing feelings such as confidence, joy, and relaxation. Participants were also to use imagery in which they made mistakes, but coped effectively with the mistakes.
Participants were also asked to document their mental skills training progress in a journal for the intervention period, they were asked to document the frequency and perceived effectiveness of the strategies applied. A log helps to systematically chart progress and provide feedback for areas of improvement (Weinberg & Gould, 2010). It was emphasised that it might feel uncomfortable in the beginning, however in time it will become better and effective. The logs were to be personal for each participant, subsequently no evaluation of the logs are presented in the study.

Reflection on the session. Participants grasped the concept of mental training without any major difficulties. Participants had an interesting discussion on what mental training meant to them, and shared their own experiences of using mental skills training (primarily the use of imagery in association with competition). Participants also expressed a strong motivation to improve their mental skills, as they found it important to performance, and felt they lacked strategies in the area. Participants had quite similar experiences and opinions of the use of goal-setting, they considered goal-setting an important aspect in facilitating motivation. They also suggested that they all employ some type of goal-setting, although not under optimal circumstances, a lack of documentation and reflection of their goals lead to sub-par effectiveness.

The exercise took approximately 50 minutes to complete. The participants had some difficulties with describing the technical components considered important. During the exercise the participants also stated that they had not given process goals a lot of consideration, although they understood the importance of doing so. There was an open discussion throughout the whole exercise, between participants, and between participants and intervention leader. Whenever someone had difficulties the input and encouragement to discuss the certain issue facilitated the participants own reflection, and ability to determine a goal. When participants experienced difficulties the intervention leader encouraged them to share their current goals, and receive feedback from the other participants to facilitate reflection. The intervention leader also shared his input a couple of times, and often asked certain questions to facilitate the participants’ reflection (e.g., what is essential to enable successful execution of this specific task?). Participants sharing their own experiences/strategies, and giving input on the other participants’ situation often helped, and lead to several discussions perceived as facilitative to the participants reflections. Breaking the components down into several basic aspects was also very effective once participants experienced problems, for example what do you need to do to shoot well: stretch your back and pull your arm back far.

The participants suggested using the list of process goals as a basis for what to focus on during practice and competition. It was also suggested to focus on a few selected goals at a time, as working on all at once may inhibit concentration, and direct concentration away from relevant information. Participants also exhibited a greater understanding for the importance of focusing on process goals during performance in this discussion.

Participants shared their own experiences of imagery, participant A and participant C reported a frequent use of imagery, while participant B had no
experience of imagery. All participants came across as open minded and enthusiastic to perform the task, and also the usage of a logbook to document their mental training and thoughts related to practice and competition. It was emphasised that if any participant had any questions, or difficulties with the task they were encouraged to contact the intervention leader for further instructions/help.

**Session 2: Concentration.**

**Content of the session.** The session began with an introduction/discussion on effective concentration in sport, including: (a) General questions on the participants experience and knowledge about concentration. (b) A brief introduction on the different components of concentration in sport. And (c) participants’ sharing their perception of what good concentration includes in a discussion.

Participants were then introduced to the first exercise of the session, thought stopping. The exercise included: (a) A brief introduction on what thought stopping is and how it should be utilized. (b) Determining a trigger (a word or movement which signals stop). (c) Instructions for utilization of thought stopping (i.e., identify negative thoughts, use trigger, and replace negative thoughts with positive and constructive thoughts.) (d) Participant establishing two separate cue words facilitative to focus, used to replace the negative thought. (e) Brief example from a voluntary participant. And (f) A discussion on how they may apply the technique when performing.

The second exercise of the session was to construct at refocus profile for each participant, the exercise included: (a) Information on the effectiveness of a refocus profile, and instructions on how to utilize it. (b) Brief instructions for construction of a refocus profile. (c) Construction of each participants individual refocus profile in cooperation with the intervention leader. The construction of a participants refocus plan involved the following steps: First possible disruptors were identified, second the participants developed strategies to avoid and cope effectively with the potential disruptors. The participants then documented this in a profile in the form of if this happens, then I do this, if this doesn’t work then, I do that instead. And finally, the participants were reminded to use the strategies in the profile in practices to become familiar enough with them to call upon them naturally in challenging situations and competition (an example of a refocus profile is available in appendix 6).

During the exercise the participants were asked to focus on a specific time period of the game (based on participant’s idiosyncratic profile of strength/limitations in emotion and concentration regulation). Participants were asked to focus on; participant A the first fifteen minutes of the game; participant B the beginning of her performance; and participant C the beginning of her performance.

Participants were then encouraged to discuss different possibilities for applying the re-focus profile to decrease occurrence of disruption and more effectively refocus when performing.

As the homework of the session, the importance of using the thought stopping technique in practices and on a daily basis was emphasised. Participants were asked to document the usage and evaluate the effectiveness of the techniques in their logbook. Participants were also reminded to perform their daily morning imagery routine.
Reflection on the session. The participant had similar opinions on what concentration was and what was required to achieve good concentration. Primarily, the knowledge on what attention should be directed towards and the ability to ignore irrelevant distractions was considered important.

The first exercise included some difficulties but went well in general. When participants were asked to determine an individual trigger two of them chose the use of some kind of body movement, while the third chose to use imagery. All participants experienced some difficulties with determining specific cue words, to assist, participants were encouraged to discuss what terms or cues might help them reach an optimal focus, through a shorter discussion between participants (including the intervention leaders input) relevant cues were established. During the discussion on how the technique may be applied the participants stated that they might have used similar strategies, but that this exercise, and discussion altered their thought process on coping with distracting thoughts. During the discussion the participants also showed an increased understanding of the importance of identifying the distracting thoughts as early as possible, to prevent the negative consequences effectively.

During the second exercise, the participants discussed the possible distractions occurring frequently during practice and competition, making the prediction of possible distractors not only based on their own basis but also that of others. The participants also discussed possible solutions to similar problems, yet individualizing their approach to each problem. The discussion between participants were perceived as facilitative when they had difficulties establishing tactics to cope with certain distractors. For example, participant B stated that a possible distractor was focusing on the weaknesses of the teams’ current defence, and had the possible solution of communicating with the team, still, she was hesitant to the effectiveness of this as she had difficulties finding the time to speak with the defence during the game. Participant C then proposed maintaining possession once won for some extra time, to enable communication with the team. Several participants also emphasised the importance of communicating with teammates to eliminate possible distractors and to cope with them as effectively as possible. During the discussion the participants also seemed to achieve a greater understanding of the importance of mental skills training, as they stated that all players on their team could benefit from performing similar exercises. During the discussion the relation between goal-setting and concentration also became evident, as several participants mentioned losing concentration due to not achieving certain outcome goals (e.g., scoring enough goals).

Participants came across as positive and motivated to utilize the techniques learned throughout the session, and to keep documenting their progress regarding the mental skills training (i.e., imagery, thought stopping, and reminders established in the refocus profile.)

Session 3: Emotion regulation.

Content of the session. The session started with an introduction on emotion regulation, including: (a) Participants sharing their experiences and strategies on
emotion regulation. (b) Information on what emotion regulation is. And (c) a discussion on the importance of emotion regulation.

To assist participants in identifying their functional and dysfunctional emotions, emotion performance profiling was conducted, following the individualized emotion profiling (IEP) (Hanin, 2000) (see appendix 8 for IEP form). When using the IZOF-based emotion profiling [IEP] (see Appendix 8), it is important to identify the content and intensity for four emotion categories: (a) pleasant functionally-optimal helpful (P+), (b) pleasant functionally-optimal harmful (P-), (c) unpleasant functionally-optimal helpful (N+), and (d) unpleasant functionally-optimal harmful (N-). As quantitative data from the participants’ best and worst performance were available, the intensity of the different emotions had already been identified. Subsequently it was only necessary for the participants to identify the content of the emotions (i.e., hedonic tone, and performance functionality). First the participants were introduced to some basic knowledge on the four global categories (i.e., P+, P-, N+, and N-). They were then asked to categorise the emotions exhibited in the quantitative data into the four different emotion categories, the emotion categories were ordered N-, N+, P+, P-. Participants were now presented with their emotion performance profile of best and worst performance. Participants were then asked how they may apply the information obtained.

Participants were then introduced to the second exercise, a breathing exercise that included the following instructions: (1) Stand with your feet shoulder-width. (2) Relax your neck, shoulders, arms, and back. (3) Direct your focus inwards and be aware of your breathing and your muscles flexing. A tip is to focus on your abs, focus on how they relax and flex when you breathe, and feel the muscles getting heavy. (4) Take a deep, slow breath without lifting your chest. (5) Consciously focus on your breathing, clear your mind of all disturbing thoughts. (6) Direct your positive thoughts on the performance, and what you need to do to perform your best. (Plate & Plate, 2005). A small discussion was held about how the participants may implement the technique when performing. It was also discussed if there was a need to modify the exercise to fit their performance in any way.

Next was an introduction on self-talk which included: (a) Participants sharing their experience of self-talk, if they apply it and in what way. (b) Some general knowledge on self-talk, and a discussion on the effective use of self-talk.

In this session self-talk included primarily reframing, and using powerful words. The intervention leader asked several questions with the purpose of having the participants reflect and discuss how to stay positive in adversity, and how to break negative thought patterns. A minor introduction was given about what reframing is, and how it may be effectively utilized. Participants were then asked to imagine a situation in which they make a crucial mistake, and to describe and document on a note how they express themselves in such a situation, what thoughts go through their mind (i.e., their self-talk). The notes were collected, and each note read out loud to emphasise that negative thoughts occur frequently in sport. Participants were asked to reflect on how these thoughts affect them, and their performance.
The participants were then introduced to the third exercise of the session, practicing reframing. The following instructions were given to the participants: (1) Select a situation in which you frequently find yourself thinking negatively. (2) Describe the situation as detailed as possible. (3) Identify the particular negative self-statements you make in this particular situation. (4) Specify a term or cue that you will use as a signal to stop your negative thoughts. (5) List realistic, positive, and constructive self-statements you can use to replace the negative thoughts. (6) Now imagine the situation, recall the negative thoughts, use your signal to stop those thoughts, and replace them with your positive self-statements. Did you feel less stressed after you replace the negative thoughts?

The participants were then introduced to the fourth exercise, a form of role play. Participants were given the following instructions: (1) Imagine a very important situation in your sport, where you make a crucial mistake, and you get upset, angry and disappointed in the situation. (2) Imagine that you lose it completely, you lose your composure, try to recall how you act, how you express yourself. (3) Describe the situation. (4) Now act/role play this situation. (5) Once participants had acted the situation they were asked to act the same situation, this time though behaving as they think an athlete who is very composed, and mentally strong would do. They were asked to imagine the perfect athlete, someone who is very confident, and mentally tough, participants reflected on the situation and then acted it.

A discussion was conducted, regarding what the participants thought was the purpose of this exercise, and what they thought they could learn from exercise two and three of the session, and how they could implement the knowledge gained when performing. How to deal with adversity effectively was discussed, including the discussion on different strategies (primarily reframing).

As a homework participants were encouraged to utilize the techniques learned during the session in practice and competition, and also reminded to continue with their morning imagery, and the utilization of previously learned techniques. Participants were asked to keep documenting their progress in their mental skills training journal.

**Reflection on the session.** In the introduction of the session, the participants gave several examples of their current emotion regulation strategies, although they were not aware that most of them were considered emotion regulation strategies. Examples were telling jokes to increase joy, or using self-talk to remain calm in crucial situations.

The emotion performance profiling went well, some difficulties occurred with categorising certain emotions as functional/dysfunctional, as some emotions could have different functionality depending on context and intensity, through discussing the emotion and also by examining the statistic numbers (i.e., intensity of emotions from best/worst performance), participants were able to reflect on and determine the functionality of the emotions. Participants considered the exercise helpful as it helped them realise what emotions are functional/dysfunctional to them. Participant A for example, realised that being nervous probably wasn’t at all dysfunctional to her as she had previously believed, but might rather have a functional impact on performance.
The participants understood and applied the technique of the breathing exercise appropriately. During the discussion of applying the technique during practice and competition, the participants thought the technique might be utilized primarily during time-outs, but also when returning to defence. Participant A also considered it as a helpful technique to apply prior to penalty shots.

In the discussion on self-talk, the participants reflected on the use of self-talk and emphasised the importance of some kind of a connection to the positive self-statements, it was considered necessary that the word had some kind of meaning to them, and that it was not just simply a word. Participants also emphasised the negative influence the negative thoughts had on them. It often lead to irritation being expressed, either towards oneself or towards the teammates.

In the third exercise, the participants identified a situation they frequently experienced while performing. They used the trigger developed in session 2, and listed several positive self-statements. Participants discussed how they had several positive self-statements which they use sometimes, and how the exercise assisted them in concretely documenting these statements, and also reflecting on in which situation a specific statement might be optimal (as it was considered situational when certain statements should be utilized). When applying the positive self-statements in the imagery part of the exercise, the participants felt happy, filled with joy and eager to play, and also calm, instead of irritated which they felt was often the consequence of negative self-statements.

In the fourth exercise, the participant’s role played situations which they themselves frequently experience. The behaviour was often considered as dysfunctional to performance, although they also emphasised that sometimes they needed to get worked up, and a bit irritated to get excited. The participants discussed how an effective behaviour should include, recognising the mistake and learning from it; letting go of the negative thoughts and avoid getting caught in negative thoughts; remaining calm and collected, and acting constructive by focusing on the task and hand and what should be done.

Session 4: Evaluation of the intervention program.

Content of the session. To evaluate the effectiveness of the intervention program, semi-structured interviews were conducted with each participant. Before the interview began participants were given the opportunity to ask questions, regarding the intervention in general, or specific elements of the intervention. The purpose of the interviews was to evaluate: (a) how much the intervention changed the participants’ awareness of emotions and concentration in relation to performance; (b) How much the intervention helped participants in acquiring knowledge on relevant regulation strategies; (c) How the participants perceived that the strategies, techniques, and knowledge acquired through the intervention may affect their emotion regulation, concentration, and performance; And (d) How satisfied the participants were with the procedure of the intervention (interview guide is presented in appendix 9). The analysis of the interviews with the participants evaluating the effectiveness is presented below in Figure 4.
**Reflection on the session.** The interviews went well, the participants came across as generally positive to the intervention. The participants were able to reflect on the intervention content, and its perceived impact, both on their athletic life, but also on their life in other areas.

<table>
<thead>
<tr>
<th>Raw data/codes</th>
<th>Themes</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>No knowledge of relevant regulation strategies (2)</td>
<td>Lack of knowledge on regulation strategies (3)</td>
<td>Participants competences before the intervention</td>
</tr>
<tr>
<td>No utilization of relevant regulation strategies (1)</td>
<td>Facilitate reflection and discussion (2)</td>
<td>Group is perceived as facilitative (8)</td>
</tr>
<tr>
<td>Facilitative to gain another perspective (2)</td>
<td>Facilitative to receive feedback (1)</td>
<td>Good organization and communication (3)</td>
</tr>
<tr>
<td>Assistance from others facilitative (3)</td>
<td>Satisfied with intervention leaders communication (3)</td>
<td>Structure and content of intervention</td>
</tr>
<tr>
<td>Facilitative to receive feedback (1)</td>
<td>Time and premises good (3)</td>
<td></td>
</tr>
<tr>
<td>Increased knowledge on regulation strategies relevant to the individual (5)</td>
<td>Increased awareness and knowledge (9)</td>
<td>Perception of impact of the intervention</td>
</tr>
<tr>
<td>Highlight the need for consistent practice of the techniques (3)</td>
<td>Awareness of emotion and concentration in relation to performance greatly increased (3)</td>
<td></td>
</tr>
<tr>
<td>Increased knowledge on functionality of emotions (2)</td>
<td>Emotion performance profiling perceived as facilitative to improve knowledge on emotional functionality (1)</td>
<td></td>
</tr>
<tr>
<td>Less prone to losing it mentally/temper (2)</td>
<td>Improved emotion regulation skills (11)</td>
<td></td>
</tr>
<tr>
<td>Easier to let go of irritation (1)</td>
<td>Improved emotion regulation skills (11)</td>
<td></td>
</tr>
<tr>
<td>Better foundation (1)</td>
<td>Perceived increased emotion regulation skills (1)</td>
<td></td>
</tr>
<tr>
<td>Increased knowledge on functionality of emotions (2)</td>
<td>Enhanced self-talk skills (1)</td>
<td></td>
</tr>
<tr>
<td>Perceived increased emotion regulation skills (1)</td>
<td>Emotion regulation strategies applicable in everyday living (3)</td>
<td></td>
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<tr>
<td>Enhanced self-talk skills (1)</td>
<td></td>
<td></td>
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<tr>
<td>Emotion regulation strategies applicable in everyday living (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improved performance by means of improved emotion and concentration regulation (3)</td>
<td>Improved athletic performance (5)</td>
<td></td>
</tr>
<tr>
<td>Expect an improve in athletic performance (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increased focus on relevant cues (3)</td>
<td>Improved concentration (4)</td>
<td></td>
</tr>
<tr>
<td>Less energy expenditure due to concentration (1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4: Analysis for the effectiveness of the intervention

The evaluation of the intervention shows that the participants experienced a lack of knowledge and utilization of relevant regulation strategies prior to the intervention. The participants’ reflections suggest that the intervention was well
organized and that they were satisfied with the communication, also, working in a group was perceived as facilitative. Regarding the impact of the intervention, the participants’ reflections suggest increased awareness and knowledge, improved emotion regulation skills and improved concentration resulted from the intervention. The participants’ reflections also indicate that the skills developed throughout the intervention may be utilized to improve athletic performance.

Discussion

Summary of the results
The present study applied the IZOF framework to examine the effectiveness of a short term intervention in improving emotion regulation, concentration and athletic performance. The purpose of the present study was: (1) To examine idiosyncratic profiles of emotions and performance of 3-4 leading handball team players in successful and less successful games and identify their strengths and limitations in emotion-concentration regulation; (2) To develop, implement, and evaluate an intervention program aimed at optimizing the players’ emotion-concentration regulation and performance. Objective one resulted in the construction of each participant’s emotion performance profile. Regarding objective two, the participants’ reflections indicate that the intervention increased their awareness and knowledge, and stimulated psychological skills development (i.e., emotion regulation and concentration). The participants also perceived that the psychological skills developed throughout the intervention could be utilized to improve athletic performance.

Results in relation to theoretical frameworks and previous research

Emotion performance profiles. The findings of the present study showed interindividual and intraindividual variability in the participants’ emotion-performance profiles, both regarding functionality and intensity of emotions. The IZOF model suggests that the level of intensity which is functional/dysfunctional, varies for the same emotion and different emotions between athletes. The model also proposes that that situational (practice/competition), interpersonal, and intra-group antecedents or consequences determine emotion intensity and content (Hanin, 2000). Subsequently a high degree of interindvidual variability regarding the intensity, and intra-individual variability regarding both the intensity and content of idiosyncratic functional and dysfunctional emotions accompanying individually successful and less successful performance is to be expected.

The participants’ emotion-performance profiles show good coordination with the IZOF model. The participants’ best performances are accompanied by high intensity of functional emotions and low intensity of dysfunctional, while the participants’ worst performances are related to high intensity of dysfunctional emotions and low intensity of functional emotions. The IZOF model suggests that there is a high probability of successful performance when experiencing a low intensity of dysfunctional emotions as well as a high intensity of functional emotions (Hanin, 2000). A large difference between actual emotional state and the optimal
zones indicates a high probability of less-than-successful performance (Hanin, 2000). Subsequently, when the athletes perform successfully they should exhibit a low intensity of dysfunctional emotions and a high intensity of functional emotions. When performing less successfully they should exhibit a large difference between their actual emotional state and the zone identified as optimal.

The IZOF model specifies four global categories of emotion based hedonic tone, and functionality: pleasant – functional (P+), unpleasant – functional (N+), pleasant – dysfunctional (P-), and unpleasant – dysfunctional (N-) (Hanin, 2000; Hanin, 2007). In the present study participants’ A and C included only two of these categories (i.e., N- and N+), while participant B included three of these categories (i.e., N-, N+, and P+) in the emotion-performance profiles. This is in contrast to most previous research with more experienced athletes where all four categories are represented (Hanin & Syrjä, 1995; Robazza & Bortoli, 2003; Robazza et al., 2004). The results of the present study, highlights a potential qualitative and quantitative difference between athletes zone profiles, previous research by Woodcock et al. (2012) present similar findings, where a difference between non-elite and elite athletes’ zone profiles is presented. Also, no participants’ emotion-performance profiles exhibit an iceberg shape (i.e., low intensity N- and P-, and high intensity N+ and P+ in best performance). A possible explanation to this may be that no one of the emotion-performance profiles included all four global categories. The participant’s emotion performance profiles show only fragments of an iceberg (i.e., low intensity dysfunctional and a high intensity functional in best performance).

**Improved emotion regulation.** The participant’s reflections suggest that the intervention was effective in increasing their perceived emotion regulation ability. To explain this result several components need to be taken into consideration. In a study by Tamir, John, Srivastava, and Gross (2007) they found that only a small majority (60 per cent) of their participants favoured the belief that emotions were more malleable than fixed. If individuals don’t consider that their capacity to regulate emotions is sufficient, they will unlikely make use of strategies, or effectively use strategies to regulate emotions. Accordingly strategies educating athletes regarding the characteristics of stimuli, their emotional response, and associated consequences of a secondary appraisal may yield a more adaptive response. Increasing awareness of the circumstances in which emotions are elicited and associated consequences are thought to facilitate a more adaptive emotional response (Jones, 2003). Enhancing an athlete’s awareness is not typically considered a psychological skill (Hardy et al., 1996), nevertheless it often forms a component of psychological skills training as part of an education phase (Uphill & Jones, 2007). Practitioners may assist athletes in modulating their appraisal of a certain stimulus (e.g., activation management strategies). Also, by educating athletes’ about the characteristics and consequences of emotions, it is possible to facilitate the athletes’ self-efficacy and/or perceived ability to cope with a situation. Uphill et al. (2009) suggest that increasing an athletes’ self-efficacy (i.e., increasing the athletes’ belief in their ability to cope with the demands of competition) appears to regulate emotions in a manner that is adaptive for athletic performance. For example, with regard to anxiety, athletes who believe in their ability
to cope with the situation, and have a positive belief of goal attainment, typically interpret their symptoms (i.e., of anxiety) as functional to performance, whereas those with negative expectancies, typically interpret their symptoms as dysfunctional to performance (Jones, 1995). Subsequently, increasing athletes’ awareness of the circumstances in which emotions are elicited and educating them about the characteristics and consequences of emotions, can be effective in assisting athletes with regulating emotions. In the current study the participants’ reflections suggest increased awareness and knowledge resulted from the intervention.

Part of an explanation to the participants’ increased awareness could be the emotion-performance profiling. The intervention of the current study included the construction of individual emotion-performance profiles with each participant, to identify emotional states related to best and worst performance, and assist the athletes in attaining awareness of their ideal emotional state. Attaining awareness of one’s ideal emotional state may be considered the first step in attaining emotional control (Barrett, Gross, Christensen, & Benvenuto, 2001). According to Hanin (2007), to explain the functional effect of emotion level on athletic performance, it is important to examine emotional intensity together with its observed and perceived/anticipated effects on performance. The IZOF model suggest that it may be useful identifying emotional states related to different performance levels and asses individually functional or dysfunctional intensity zones, and also identify the athlete’s perception of the functional effects (and hedonic tone) of emotions. Also, one of the participants highlighted the importance of the emotion-performance profiling in increasing awareness of the functional and dysfunctional states accompanying different performance levels. Accordingly, emotion-performance profiling could be an effective tool for assisting athletes in increasing awareness of emotional states related to various performance levels (i.e., both successful and less successful performances).

If increased awareness of one’s ideal emotional state may be considered the first step, the next step could be attaining strategies to achieve or maintain that state. In line with the IZOF model (Robazza et al., 2004), athletes are encouraged to adopt activation management strategies to recover an optimal content of emotions, and to reduce or enhance emotional intensity, increasing the possibility of reaching and remaining close to or within their individual optimal zones. These activation strategies may include behavioural, cognitive (e.g., self-talk), and somatic-based self-regulation techniques (e.g., muscular relaxation and deep breathing). According to the directional perspective proposal (Hanton & Jones, 1999) athletes experiencing debilitative effects from dysfunctional symptoms, may use cognitive restructuring techniques, such as goal setting and self-talk, to alter the intensity and their interpretation of emotional intensity. To reconnect with the process model of emotion regulation (Gross & Thompson, 2007), the participants of the present study were introduced to emotion regulation strategies within several of the classes presented in the framework. Participants were introduced to deep breathing, which could be considered a response modulation regulation strategy as it is relaxation used to decrease physiological and experiential aspects of negative emotions (Gross & Thompson, 2007). Also, as the participants were encouraged to direct their focus on
specific cues (which may influence emotions) during the execution of the technique (i.e., consciously focus on their breathing), it could also be considered an attention deployment technique. Accordingly the breathing technique thought to the participants could possibly be utilized as both an antecedent focused and response focused emotion regulation strategy. The participants were also introduced to self-talk, specifically the concept of reframing. Reframing may be categorised within the cognitive change class as it involves efforts at changing the meaning of thoughts about a particular situation (e.g., by reappraising the extent of self-blame after a crucial mistake). Another part of the intervention program related to goal-setting, goal-setting may assist the participants’ by reminding them of what to concentrate on and which behaviour is desirable in different situations. Accordingly, goal-setting could be considered a form of situation selection, as it assists the participants’ in acting in a way that makes it more likely to achieve a successful behaviour (i.e., end up in a situation expected to rise desirable emotions). The participants’ reflections suggested that the techniques acquired throughout the intervention could be utilized to effectively regulate emotions.

The participants of the current study stated that the emotion regulation strategies acquired throughout the intervention was of use not only in athletic settings, but also in other areas of their life. According to Erber, Wegner and Therriault (1996), athletes may apply the emotion regulation strategies used in athletics in different domains of their lives. For instance, social interactions often require people to remain “cool and collected”, accordingly people might down-regulate both negative and positive moods. To achieve maximum benefit from sport psychology interventions, practitioners might focus not only on enhancing athletes’ abilities to regulate emotions in sport, but also include other areas in which the emotion regulation strategies may be utilized.

**Improved concentration.** The current study evaluated the concentration techniques (i.e., goal-setting, self-talk, and imagery) in a combination as an intervention program. Research have demonstrated that focusing on process goals in association with performance is related with a greater control of cognitive anxiety and increased concentration (Kingston & Hardy, 1997). The findings of Landin and Herbert (1999), also highlight the effectiveness of self-talk in increasing athlete’s concentration and performance. Theoretically, it seems valid that instructional self-statements enhance concentration by reminding performers of what to focus on in a certain situation. The participants of the current study were encouraged to reflect on the importance of process goals in association with performance, and educated on the relationship between different type of goals and performance. The participants were also introduced to the usage of thought stopping in association with relevant cue words as a technique to enhance concentration. The participants’ reflections suggest that the intervention facilitated their concentration, accordingly a procedure similar to the current intervention program may be considered an appropriate first step in an athlete’s development.

**Improved performance.** The reflections of the participants suggest that the psychological skills developed throughout the intervention may be utilized to improve
athletic performance. The second factor of the model of psychological preparation for peak performance refers to the psychological skills an athlete possess, how these skills are used, and which strategies are being used that could be essential for a successful performance. Facilitating the development of these psychological skills indirectly assist the athlete in achieving consistently high performance and peak performance states (Hardy et al., 1996). These results are also in line with comprehensive reviews of the existing mental training literature supporting the effectiveness of psychological skill training in enhancing athletes’ performance (e.g., Greenspan & Feltz, 1989; Vealey, 1994).

**Methodological reflections**

Much of the current work available in sport psychology is based on experiential knowledge, and practitioners sometimes encounter difficulty building effective mental training of programmes for individual athletes and teams. Subsequently, there is a clear need in the practice of sport psychology for theory/model-based mental training and self-regulation programmes based on research evidence (Hardy, Jones & Gould, 1996). The present study applied the IZOF framework from an applied perspective, to examine the effects of a short term intervention in improving emotion regulation, concentration and athletic performance.

Wagstaff, Hanton, and Fletcher (2013) suggest that emotion regulation strategy use may be improved through a workshop approach. They also suggest that if athletes are to develop actual abilities to perceive and regulate emotions optimally in a real-life setting either a longitudinal (i.e., longer than 6 months) or idiosyncratic approach could be required. As the current study was a short term intervention (i.e., lasted 4 weeks), it is important to recognise the difficulties in making an assumptions as to what the long term effects of the intervention may be. Unfortunately, once the intervention ceases, the effects experienced may decrease due to several reasons (e.g., lack of reflection on effectiveness of current strategies/techniques, lack of motivation to practice and apply techniques and strategies). The current intervention could be considered the first step in the athlete’s development of psychological skills to regulate emotions and concentration. Still, several of the participants express an increased understanding for the importance of consistent practice of the techniques acquired, and show signs of motivation to continue practicing and utilizing the techniques. An interesting direction for future research is to examine the long term effects of a similar intervention program.

**IZOF approach.** Several studies have applied the IZOF approach in both single (Woodcock, Cumming, Duda, & Sharp, 2012) and multiple (Robazza et al., 2004; Cohen et al., 2006) case studies. The results of these studies indicate that the IZOF-based intervention has the possibility of: enhancing the probability of optimal performance states (Woodcock et al., 2012; Robazza et al., 2004), enhancing emotional self-regulation skills, and improving performance (Cohen et al., 2006). The intervention of the current study was applied in a group setting, still, the intervention program was based primarily on each athlete’s idiosyncratic profiles, and included specific individual instructions for certain aspects of the intervention program,
acknowledging an idiosyncratic approach in the study. As the participants’ individual intervention goals were similar, the goals were integrated, and the sessions conducted in a small group. The participants of the current study perceived that the intervention was successful in increasing awareness and knowledge, and facilitating psychological skills development (i.e., emotion regulation and concentration). These results are in line with those of other studies highlighting the effectiveness of an idiosyncratic approach in developing abilities to regulate emotions and improve athletic performance.

The present study is one of few IZOF-based interventions that focused on *during* event zones of functioning. The majority of previous research has examined components of pre-competition psychobiosocial states (e.g., Robazza et al., 2008; Hanin & Stambulova, 2002). Hanin (2000) highlighted the difficulties with measuring zone proximity during events, and also explained why research in this area has received limited attention. An example of another study focusing on *during* event zones of functioning was presented by Woodcock et al. (2012). Focusing on during event zones of functioning is interesting as it is likely that emotions experienced during competition have a greater influence on performers (and their internal thoughts) rather than emotions experienced prior to competition. (Hatzigeorgiadis & Biddle, 2001).

The participants of the current study perceived working in a group as facilitative to the development of psychological skills. The presence of others was thought to include several beneficial outcomes such as facilitating reflections, assistance from others when struggling, and encouraging discussion. The similarity of the participants’ individual intervention goals is important to acknowledge, as it was possible to integrate the individual goals into group goals. Subsequently, working in groups with athletes experiencing similar issues may be perceived as facilitative to psychological skills development. Identifying the issues of each individual athlete, to examine the possibility of conducting small group sessions may be considered an important first step in the intervention procedure. One of the participants also included an important reflection in the evaluation, if group sessions are to be conducted the importance of making the participants comfortable with sharing their thoughts, feelings and opinions should not be underestimated, as it is essential to the effectiveness of the intervention. It is also important to acknowledge the idiosyncratic profiles of strengths/limitations in emotion and concentration regulation in the current study. According to Dale (1996) the importance of an idiosyncratic approach is supported by the notion that group-interventions may underestimate or ignore the phenomenology of performance-related subjective experiences reflecting an athlete’s perspective.

**Emotion performance profiling.** When using the IEP the athletes are usually asked to recall the intensity and content of the emotional experience of their best ever and worst ever performances in the past. A possible issue with this method is the difficulties athletes may experience with recalling reliable and accurate content and intensity of past events. Overall, the findings of previous research indicate that people remember their emotions relatively accurate. In most studies testing the reliability of
emotion recall, the intensity of emotion recalled at a later stage is highly correlated with the initially reported intensity (i.e., $r = .50$). Nevertheless, relative accuracy across individuals does not assure fidelity of recall for any individual, and both underestimation and overestimation do occur (Levine & Safer, 2002). In a review by Levine and Safer (2002) the researchers suggest that diagnostic and experimental tests based on self-reports of past emotions, as well as testimonies concerning the emotional impact of past events ought to be interpreted with certain caution. This since, previous research in memory for emotion have shown that biases in memory for emotion occur as a function of current emotion, appraisals, personality, and coping effort. These biases have been exhibited in everyday emotional experiences and for intense emotions associated with sudden events, regarding both positive and negative emotions. Accordingly emotion performance profiling in which athletes are asked to recall the intensity and content of performance related experiences may include several issues, a possible way to deal with these issues may be through relying on athlete’s immediate reflection on performance experiences following competitions. By collecting quantitative data using the ECPP(H), the participants were supplied with a reliable content and intensity of emotions of the performance related experience.

Also, an important improvement to the ECPP(H) became evident during the present study. The emotion-performance profile of participant C exhibit several outliers, as much as five different emotions are reported at an intensity of 10 (i.e., maximum intensity). This result could be accurate, still experiencing five emotions at such a high intensity is quite unlikely. To decrease the risk of outliers such as those exhibited by participant C, an explanation for the scale in the instrument (i.e., 1-10) could be added. Adding a definition for each of the values (i.e., numbers) could clarify the meaning of each intensity. For example 1- nothing at all, 2- very little, 3- little, 4- moderate, and so on.

One participant decided to drop out of the study after the first session, due to personal reasons. The dropout was not thought to affect the result of the study substantially. Still, to reduce the risk of drop outs affecting the results, future studies might consider increasing the number of initial participants.

**Evaluation.** Perhaps the greatest limitation of the study is the way in which the effectiveness of the intervention was evaluated. Participants were asked to reflect on the perceived effectiveness of the intervention primarily based on their own experiences. Accordingly there is an apparent risk for a type of demand characteristics (i.e., participant’s state that the intervention was effective in facilitating emotion regulation, concentration, and performance to “please” the researcher). The potential of this issue is also increased due to the fact that the researcher also assumes the role as the intervention leader. It is possible that if the intervention wasn’t effective, participants do not feel comfortable stating this in the interview with the researcher as it could be interpreted as critique to the intervention leader (i.e., the researcher). To reduce the risk of this issue, it has been emphasised that the participants are encouraged to objectively evaluate the effectiveness of the intervention and try to be as honest as possible as this is in the best interest of the study. Another possible
solution to this issue could’ve been to include a separate researcher to conduct the interviews.

**Future research and implications**

The results of the current study indicate that small group sessions with individuals experiencing similar issues may include several beneficial outcomes for the athletes. Conducting smaller group sessions with team sport athletes may include additional benefits not examined in the current study. Orlick (2000), describes the critical role of communication in group cohesion in a form of harmony. This harmony cultivates when athletes really listen to each other, are considerate of each other’s feelings, accept each other’s differences, and help one another. A climate of openness is essential to effective team building, where airing problems and matters of concerns is considered not only appropriate but also is encouraged (Weinberg & Gould, 2010). Improving interpersonal relations is important as increased communication has a circular relation with increased group cohesiveness (Carron & Hausenblas, 1998). Meaning, as communication about task and social issues increases, cohesiveness develops. Subsequently, group members are more open with each other, talk more, and listen more. As the current study indicate, group sessions may foster individual development, and include several additional advantages. An interesting direction for future research could be examining the impact individualized, minor group sessions have on team dynamics and team cohesion in team sport.

As emotions are subjective, no one emotion is functional to all athletes. Empirical evidence supporting the idiographic nature of how emotions influence performance has been presented by Hanin and Syrjä (1995). Subsequently there is a need to examine the emotion performance-relationship in applied setting studies. It is also important to thoroughly examine how and why different emotional intensities influence athletic performance. Identifying why a certain intensity of an emotion (i.e., low, moderate, or high) is functional or dysfunctional to athletic performance remains an issue in emotion research (Hanin, 2007), and is an important direction for future research. Also, examining and reducing the effects of negative emotions on performance have been a big focus of sport psychology research, perhaps to the disadvantage of exploring the benefits of positive emotions on performance and psychological well-being (Uphill et al., 2009). According to Seligman, Steen, Park, and Peterson (2005), interventions to enhance positive emotions are the bottom line of positive psychology. Investigating how athletes regulate positive emotions is an interesting and important topic for future research.

The findings of the present study indicate an IZOF based intervention may yield promises in increasing awareness and knowledge, and stimulate the development of psychological skills, which may be utilized to improve performance. As the evaluation is based solely on the participants’ reflections the results should not be interpreted as support for the effectiveness of the techniques and strategies included, in enhancing psychological skills and athletic performance. The results are primarily a support for the effectiveness of the process as a first step in assisting athletes in their development. Accordingly, psychological skills training interventions
is a powerful tool for practitioners seeking to assist athletes in achieving success in sport. In addition emotion regulation skills acquired in a sport psychology intervention may be successfully utilized in other areas of an athlete’s life. Practitioners may encourage their athletes to reflect on possible areas in addition to athletic settings, in which the skills acquired may be utilized.

**Conclusion**

The present study supports the efficacy of working with the IZOF framework from an applied perspective. The findings of the study indicate that a short-term intervention to increase awareness and knowledge, as well as stimulate psychological skills development (i.e., emotion regulation and concentration) may be an appropriate first step in athletes’ development. The results of the present study also highlight several important benefits of minor group interventions in facilitating athlete’s psychological skills development.

“Just before the fight, when the referee was giving us instructions, Liston was giving me that stare. And I won’t lie; I was scared. Sonny Liston was one of the greatest fighters of all time. He was one of the most scientific boxers who ever lived; he hit hard; and he was fixing to kill me. It frightened me, just knowing how hard he hit. But I was there; I didn’t have no choice but to go out and fight.”

Muhammad Ali

(Thomas Hauser, 1991, p.74)

Muhammad Ali, by many considered the greatest boxer of all time, to this date one of the most famous athletes, possibly the most confident athlete of modern time, was scared. What is important to recognise, clearly given Ali’s legendary status as an athlete and professional boxer, he possessed the abilities necessary to cope with these emotions and manage his concentration. Both components crucial to be able to perform in any sport, where mistakes might lead to substantial consequences.
Acknowledgements

I would like to express my deep gratitude to Professor Natalia Stambulova, my research supervisor, for her patient guidance and priceless critiques of this research work. I would also like to thank Dr. Montse Ruiz, my co-supervisor for her valuable advising on the emotion-performance profiling process.
Reference


Appendix 1

Psychological skills/Strategies for facilitating peak performance

Task specific ideal performance states

Peak Performance

Personality

Motivational
Foundation

Philosophical

Physical ∙ Social ∙ Psychological ∙ Organizational environment

(Facilitative ∙ Debilitative)

Adversity coping strategies

Performance
Accomplishments
Vicarious
Experiences
Verbal persuasion
Motivational climate
Overtraining
Quality training
Task demands
Social support

Self-efficacy
Arousal
Activation
Mood
Self-determination
Burnout
Somatic

48

Appendix 1
Hej!
Vi vill börja med att tacka dig för din medverkan i denna studie. Vi är två studenter som studerar idrottspsykologi vid Högskolan i Halmstad. Vi utför en studie med syftet att undersöka sambandet mellan psykologiska faktorer och prestation. Studien är helt frivillig och du kan när som helst avbryta din medverkan utan några konsekvenser eller någon som helst förklaring gentemot oss, ditt deltagande är dock viktigt för oss och studiens syfte.

Har du några frågor, tveka inte på att kontakta oss:

Jasper Vallmark Jansson 0738-441142 Jasper.wallmark@gmail.com
David Olausson 0703-368924 Davidolausson@live.com

Handledare
Natalia Stambulova
Natalia.Stambulova@hh.se

Vänligen fyll i följande uppgifter:
Dagens datum:
Id Kod:

Genom att kryssa i den här rutan godkänner jag mitt deltagande i denna studie.
Appendix 3

Emotion, Concentration and Performance Profile
-In Handball

Tänk igenom dagens match och ringa in den siffran som bäst stämmer överens med din uppfattning gällande varje emotion/påstående/frågor.

<table>
<thead>
<tr>
<th>Emotioner 1:a Halvlek</th>
<th>L Å G</th>
<th>H Ö G</th>
<th>Emotioner After Time-out</th>
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<td>3. Missnöjd/Besviken</td>
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### Koncentration 1:a Halvlek

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<td>3. Jag lyckades hantera/ignorera distraktioner effektivt</td>
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### Prestation 1:a Halvlek

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<td>2. Till vilken grad motsvarade din personliga prestation de förväntningar du hade på dig själv.</td>
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<td><strong>Konsentrering 2:a halvlek</strong></td>
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<td>1. Till vilken grad motsvarade lagets prestation de förväntningar du hade på laget.</td>
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<td>2. Till vilken grad motsvarade din personliga prestation de förväntningar du hade på dig själv.</td>
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<td>4</td>
<td>5</td>
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</tbody>
</table>
Uppskattad speltid i dagens match:

- Ingen speltid
- Mindre än 5 minuter
- Mindre än 20 minuter
- Mer än 20 minuter

Övrig kommentar:
Hej!
Jag vill börja med att tacka dig för visat intresse till deltagande i denna studie. Jag är student inom idrottspsykologi på högskolan i Halmstad. Nedan ger du ditt samtycke till att delta i den intervention studie där vi kommer att arbeta med emotion och koncentrations reglering inom idrott. Studien kommer innefatta fyra sessioner i grupp över fyra veckors tid, under dessa sessioner kommer vi arbeta med mental färdighets träning, i form av målsättning, koncentrations reglering, och emotions reglering. Läs igenom detta noggrant och ge ditt medgivande genom att kryssa i rutan längst ned.

Studien är helt frivillig och du kan när som helst avbryta din medverkan utan några konsekvenser eller någon som helst förklaring gentemot mig. Allt material som samlas in i denna studie används endast i forskningssyfte, och behandlas konfidentiellt, detta innebär att det inte går att urskilja vad just du har svarat. Om några som helst frågor uppstår utmed studiens gång, kontakta interventionsledare.

Medgivande

• Jag har tagit del av informationen kring studien och är medveten om hur den kommer att gå till och den tid den tar i anspråk.
• Jag har fått tillfälle att få mina frågor angående studien besvarade innan den påbörjas och vet vem jag ska vända mig till med frågor.
• Jag deltar i denna studie helt frivilligt och har blivit informerad om varför jag har blivit tillfrågade och vad syftet med deltagandet är.
• Jag är medveten om att vi när som helst under studiens gång kan avbryta vårt deltagande utan att vi behöver förklara varför.
• Jag ger detta medgivande förutsatt att inga andra än de forskare som är knutna till studien kommer att ta del av det insamlade materialet.

Har du några frågor, tveka inte på att ta kontakt:

David Olausson   Telefon: 070-3368924   Email: Davidolausson@live.com

Handledare
Natalia Stambulova
Natalia.Stambulova@hh.se

Genom att kryssa i den här rutan medger jag samtycke till deltagande i denna studie.
Appendix 5

Process goals participant A

1. Breaking through the defence
   A. “Flexible” – move forward not sideways, primarily the last step.
   B. Push away – the foot strike.
   C. Go towards the opening “next to the defender”.

2. Stretch your upper body + abdomen (shooting)
   A. “back straight”.
   B. Arm high – gently backward.
   C. Speed – push away, jump upwards.

3. Defence – Read the game, be on the right place, strength
   A. Fast/footwork, be on your toes.
   B. Hands in the air – forward towards the attacker.
   C. Act, read the game, body language.
Appendix 6

Refocus profile participant C

What disrupts my concentration:
- The coach
- Others performing poorly
- Me performing poorly
- Fatigue/exhaustion
- Poor preparation
- Everyday stress

If this happens:

The coach
1. Chose to focus on what’s relevant, and what I am to do.
2. Breathe and feel comfortable with what you are doing.
3. Ask for help and discuss with the coach to achieve optimal result.

Others performing poorly
1. (Self-talk) “My performance”- I can’t affect others performance.
2. Give tips to teammates, what they can do and psych.
3. (Self-talk) “breathe and start over”

Me performing poorly
1. (Self-talk) “breathe and start over”
2. Focus on and think about what you need to do and what you can do.
3. (Self-talk) “love and heart”
4. Contest the negative – you are not bad.

Fatigue
1. Asses and chose your times of “pushing it” instead.
2. Push it and rest when opportunities arise.
3. Fighting spirit

Poor preparations
1. Meditation and breathe to calm down
2. Thought-parking

Everyday-stress
1. Breathe to relax. Asses what you need to do.
2. Thought-parking
3. Categorise what needs to be done, and do it gradually.
Appendix 8

IZOF-Based Emotion Profiling

Step 1) Identify individually successful and unsuccessful (poor) performance.

Step 2) Go over the emotion descriptors in list A and select up to 5 words that describe the emotions that were HELPFUL before your best ever performance in the past. Each line in the list consists of several synonyms; you may select only one word on the same line. If you don’t find a word describing an emotion that is important to you, you may add your own word. Write the words in the numbered blanks in page 2.

Follow the same procedure for HELPFUL emotions in list B

<table>
<thead>
<tr>
<th>List A:</th>
<th>List B:</th>
</tr>
</thead>
<tbody>
<tr>
<td>active, dynamic, energetic, vigorous</td>
<td>afraid, fearful, scared, panicky</td>
</tr>
<tr>
<td>relaxed, comfortable, easy</td>
<td>angry, aggressive, furious, violent</td>
</tr>
<tr>
<td>calm, peaceful, unhurried, quiet</td>
<td>annoyed, irritated, distressed</td>
</tr>
<tr>
<td>cheerful, merry, happy</td>
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<td>confident, certain, sure</td>
<td>concerned, alarmed, disturbed,</td>
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<tr>
<td>delighted, overjoyed, exhilarated</td>
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<tr>
<td>determined, set, settled, resolute</td>
<td>discouraged, dispirited, depressed</td>
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<tr>
<td>excited, thrilled</td>
<td>doubtful, uncertain, indecisive, irresolute</td>
</tr>
<tr>
<td>brave, bold, daring, dashing</td>
<td>helpless, unsafe, insecure</td>
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<tr>
<td>glad, pleased, satisfied, contented</td>
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<td>inspired, motivated, stimulated</td>
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<td>lighthearted, carefree</td>
<td>jittery, nervous, uneasy, restless</td>
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<td>nice, pleasant, agreeable</td>
<td>sorry, unhappy, regretful, sad, cheerless</td>
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<tr>
<td>quick, rapid, fast, alert</td>
<td>tense, strained, tight, rigid</td>
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<tr>
<td>Your own emotion:</td>
<td>tired, weary, exhausted, worn out</td>
</tr>
<tr>
<td></td>
<td>Your own emotion:</td>
</tr>
</tbody>
</table>

Step 3) Follow the same procedure as for step 2, selecting up to 5 words from list B and list A to describe the emotions that were HARMFUL before your worst ever performance in the past. Again, you can add words of your own. Write the words in the numbered blanks in page 2.

Step 4) Think back of the performance you identified in step 1 as the most successful. Using the scale below rate the intensity of each HELPFUL emotion you felt before this performance.

Do the same for the performance you identified in step 1 as the most unsuccessful. Rate the intensity of each HARMFUL emotion experienced before that performance.

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<th>INTENSITY SCALE</th>
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Slightly modified version of the forms from Emotions in Sport by Yuri L. Hanin 2000, Champaign, IL: Human Kinetics.
**Emotions in your BEST EVER and WORST EVER performances**

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<th>Success</th>
<th>Failure</th>
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**Intensity (CR-10)**

- **Dysfunctional Emotions**
- **Optimal Emotions**
- **Pleasant Emotions**

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**Graph**

- Dysfunctional Emotions
- Optimal Emotions
- Pleasant Emotions
- Intensity (CR-10)
1. How much would you say that the intervention has changed your awareness about your emotions and concentration in relation to your performance?

2. How much did you know about relevant regulation strategies:
   - Before the intervention?
   - After the intervention?

3. How do you think the strategies and techniques you have learned and the knowledge you have obtained during the intervention may affect your ability to:
   - Regulate your emotions?
   - Concentrate successfully?
   - Perform successfully?
   - In other areas of your life (i.e., not only athletics)?

4. How satisfied were you with the process of the intervention (i.e., the time and place of the sessions, the small group sessions, and the way I communicated with you during the session)?
David Olausson
Magisterstudent, Högskolan i Halmstad.