

**ACCEPTANCE-, MINDFULNESS- AND VALUE-BASED PSYCHOLOGICAL COACHING  
FOR ELITE FEMALE FLOORBALL PLAYERS**

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AUKEE, HEIDI: Hyväksyntä-, tietoisuus- ja arvopohjaisiin menetelmiin perustuva psyykinen valmennus naisten salibandyn SM-liigapelaajille.

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Urheilijoiden psyykinen valmennus on pitkään nojannut erilaisten psyykkisten taitojen opettamiseen, vaikkei niiden vaikuttavuudesta ole kovin vahvaa näyttöä. Tämän tutkimuksen tavoitteena oli selvittää, miten kuusiviikkoinen hyväksymis-, tietoisuus- ja arvopohjainen psyykkisen valmennuksen interventio soveltuu joukkueurheiluun, tässä tapauksessa naissalibandyyn. Tutkimuksen koeryhmänä toimi salibandyn SM-liigajoukkue, jolle interventio toteutettiin (n=25). Osallistujat täyttivät ennen ja jälkeen intervention erilaisia psykologisia sekä urheilusuoritukseen liittyviä mittareita, lisäksi pelaajilta kerättiin palautetta lomakkeella sekä haastatteluilla. Aineisto koostui pääasiassa kvalitatiivisesta datasta. Tulosten mukaan lähes kaikki pelaajat kokivat intervention hyödyllisenä ja useat saivat erilaisia välineitä ahdistuksen ja stressin käsittelyyn ja lisäksi interventio paransi heidän ymmärrystään omaan urheilusuoritukseen vaikuttavista tekijöistä. Lisäksi interventiolla oli positiivinen vaikutus pelaajien itseluottamukseen urheilijana. Tämän tutkimuksen perusteella voidaan väittää hyväksyntä-, mindfulness- ja arvopohjaisen psyykkisen valmennuksen soveltuvan melko hyvin urheilijoille.

Avainsanoja: HOT, mindfulness, psyykinen valmennus, salibandy

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AUKEE, HEIDI: Acceptance-, mindfulness- and value-based psychological coaching for elite female floorball players.

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The psychological coaching of athletes has been relying mainly on psychological skills training for the past few decades, even though it lacks coherent empirical evidence. The aim of this study was to investigate how a 6-week acceptance-, mindfulness- and value-based psychological coaching applies as a group intervention for team sports, in this case for elite female players. The study group consisted of a floorball team (n=25) who received the intervention. The participants filled in forms for psychological and sport-related measures before and after the intervention, in addition, feedback was collected from the players with a questionnaire and an interview. The data was mainly qualitative. Based on the results, almost all of the players benefitted from the intervention and they learned new methods for handling stress and anxiety and they gained a better understanding of the factors affecting their sport performance. Additionally, the intervention had a positive effect on the players' self-confidence as athletes. This study provides some support on the feasibility of the acceptance-, mindfulness- and value-based methods for psychological coaching for athletes.

Keywords: ACT, mindfulness, psychological coaching, floorball

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# 1. INTRODUCTION

## 1.1 Psychology of sports

Traditionally the psychology of sports has been seen as a combination of teaching skills that promote the performance and treating the psychological problems related to sport performances. Also lately one of the main goals of psychological coaching has been promoting the overall well-being of athletes (Matikka & Roos-Salmi, 2012). The psychology of coaching can be divided into three sections: promoting psychological well-being and the development of personality by supporting coaching, teaching psychological skills, and treating the possible problems the athletes may encounter. The psychological skills taught have traditionally been focusing, goal-setting, interaction, imagery and mental rehearsal, relaxation, and stress management (Matikka & Roos-Salmi, 2012).

Jones (2002) defines the dimensions and traits that are related to the so called mentally tough elite performers. He claims that “mental toughness is probably one of the most used but least understood terms in applied sport psychology” (Jones, 2002). According to his qualitative research mental toughness is defined as “having the natural or developed psychological edge that enables you to generally cope better than your opponents with the many demands that sport places on a performer and specifically be more consistent and better than your opponents in remaining determined, focused, confident and in control under pressure” (Jones, 2002). Other used terms in the field of sport psychology are the ideal performance state (Hardy, Jones, & Gould, 1996) and the flow state (Csikszentmihalyi, 1975). These terms interface in many ways as they both can be described as a state where physiological, cognitive and affective conditions are in an ideal balance when they allow learned skills to appear in an automatic mode that will more likely lead to successful performance (Gardner & Moore, 2007).

The history of applied psychology of sports is quite short and it can be said that it is mostly related to Bandura’s social cognitive theory (Bandura, 1977) and other cognitive behavioural theories, such as Meichenbaums’s development of cognitive behavioural modification (Meichenbaum, 1977). In recent decades one of the major methods in enhancing athletic performance has been developing the self-control of internal states by using psychological skills such as relaxation, imagery and mental rehearsal, self-talk and goal-setting. This is called psychological skills training; PST (Hardy, Hall, & Hardy, 2005).

### **1.1.1 Psychological Skills Training**

The fundamental background of PST is based on the assumption, that the optimal athletic performance is related to the “ideal performance state”, which will most likely occur when negative emotions and thoughts are controlled or reduced. The control of negative thoughts and emotions is seen as the key to elite performance and the control of internal states has been the main focus on the research of psychology of sports during last decades. Despite the fundamental assumption of the importance of self-control there is only little evidence that experiencing negative thoughts or emotions would impair the performance. In fact, there are several models and theories that suggest the opposite.

The Cusp Catastrophe Model, the Processing Efficiency Theory, and the Individual Zones of Optimal Functioning (IZOF) model all suggest that it is possible to reach the ideal performance state while experiencing negative thoughts or emotions (Neil, Mellalieu, & Hanton, 2006). According to the Cusp Catastrophe Model up to a certain point, high levels of anxiety and physiological arousal can lead to successful performance, and only when the level on anxiety is too high, it may cause catastrophic declines in performance. Cohen and colleagues have later pointed out that even high levels of anxiety may not affect the performance catastrophically, and therefore the fundamental assumption of the need to control the anxiety, could be seen as defective (as cited by Hasker, 2010, p.5). Moore and Gardner (2011) also support this thought in their article of emotion regulation model where they present that experiential and/or expressive suppression of emotion has been shown to result in maladaptive outcomes such as impaired decision-making and maintenance of psychopathology in theoretical, experimental, and clinical research (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996b). Taken together, these results suggest that controlling thoughts and emotions may even have the opposite effect on performance than assumed in the PST model.

In a systematic review carried by Tod, Hardy and Oliver (2011) the effects of self-talk, which is one of the methods of PST, were examined. The collected data suggests that negative self-talk might not have a negative effect on performance and that there is no significant performance difference between positive and negative self-talk (Tod et al., 2011). In addition, Gardner and Moore (2007) bring out the fact that qualitative reviews of the self-talk literature show that in fact, self-talk procedures have often led to mixed or negative results. Here by the procedures should be carefully reconsidered.

Some of the other PST model dimensions can also be questioned. Craft and colleagues (Craft, Magyar, Becker, & Feltz, 2003) carried out a meta-analytic review of the relation between

athletic performance, self-confidence, and competitive anxiety. They found out that self-competitive anxiety and athletic performance are poorly related.

According to Gardner and Moore (2006) none of the procedures of PST show enough empirical support when taking into account how widely it is actually utilised around the world. Some multicomponent interventions, where PST techniques have been combined, have shown slightly better empirical support, but still the results are incompatible. Altogether, there is a lack of relevant empirical support when it comes to the use of PST and its efficacy. In the meta-analysis of PST research Gardner and Moore (2006) analysed 104 empirical studies examining the efficacy of PST and found out that most studies do not meet the criteria for evidence-based empirical support. It is rather clear that new perspectives and methods are needed in the field of sport psychology.

### **1.1.2 New approaches in the field of sport psychology**

During the last decade, there have risen new approaches of sport psychology and elite performance. Since the idea of controlling negative thoughts and emotions seems to be faulty, the new wave has approached the topic from a different perspective; the mindfulness and acceptance-based approach. In mindfulness the aim is not to suppress any of the emotions and thoughts but to accept them and to learn to live with and despite them (Gardner & Moore, 2004b).

Mindfulness-based sport psychology suggests that athletic performance enhancement may be achieved by developing a mindful, non-judging, state of mind where present-moment acceptance of one's internal processes is combined with a clarification of valued goals and enhanced attention to external cues (Gardner & Moore, 2004b). Gardner and Moore (2004b) also suggest that mindfulness training may lead to a greater self-awareness, which may help to identify the habitual ways of reacting to external cues, resulting in enhanced behavioural flexibility in athletic performance. Gardner and Moore refer to a study (Klinger, Barta, & Glas, 1981), where it was shown that when attentional focus shifted from external cues to a more self-judging manner it resulted in lowered athletic performance level. Another study also showed (Edwards, Kingston, Hardy, & Gould, 2002) that self-evaluation during performance may cause weakened athletic performance (Gardner & Moore, 2004b).

Gardner and Moore (2007) suggest that to achieve an ideal performance state, the attention must be task-focused instead of self-focused. With self-focused attention they mean attention towards internal stimuli like thoughts and emotions, whereas task-focused attention consists of

external stimuli, options and contingencies. Gardner and Moore (2004b) claim that when the attention is self-focused, it might be possible that the negative thoughts and emotions may increase or last longer: when the focus is on controlling the internal states the athlete is preoccupied with reducing the undesirable thoughts and emotions one is experiencing and therefore the behaviour is disturbed. But when the focus is on the task on demand, the athlete can appropriately respond to the cues relevant to performance and maintain optimal focus. (Gardner & Moore, 2004a)

According to Gardner and Moore (2004b) optimal self-regulation requires meta-cognitive attention to external cues and options, but at the same time minimal self-judgement, minimal vigilance to external or internal threat and minimal worry. Gardner and Moore (2004b) refer to a study, where a stress-management intervention was used on elite volleyball players to develop the capacity to focus on performance, attend in the moment and cope with the experienced emotions. In this study the competitive performance enhanced significantly even though there was minimal reduction in both competitive anxiety and negative cognitions. Gardner and Moore (Gardner & Moore, 2004b) argue that recent studies show that aiming towards self-control in athletic performance may lead to overly cognitive rather than meta-cognitive activity, which might result in reduced capacity of utilizing previously developed athletic skills, reacting to external cues and maintaining focus in the athletic task.

### **1.1.3 Acceptance-commitment model of sport enhancement**

Gardner and Moore (2004b) present The Mindfulness-Acceptance-Commitment-based (MAC) approach which is an integration of Acceptance and Commitment therapy and Mindfulness-Based Cognitive therapy, developed for athletes. It emphasizes non-judging, mindful awareness and acceptance of in-the-moment inner experiences instead of controlling and reducing internal experiences. The MAC approach believes that it is possible to improve performance while experiencing negative internal states. All internal states are seen as normal part of human existence and sports. In MAC, psychopathologies and psychological problems are thought to derive from experiential avoidance (Gardner & Moore, 2004a), which in the field of sports may lead in to detrimental behaviour in athletic performance. The aim in MAC is for the athlete to be able to accept the internal experiences while at the same time maintaining the capability to focus on external cues. In addition to athletic performance, MAC also targets enhancing problem-solving,

decision-making and behavioural processes that are needed in everyday life outside the sports (Gardner & Moore, 2004b).

There are several studies that have shown the efficacy of the MAC training for improving athletic performance. Case studies (Gardner & Moore 2004, 2007) have researched high-level athletes and the results suggested that both process measures of attention and awareness and outcome measures of performance were enhanced. There are some studies that have compared MAC and traditional PST training and the results suggest that participants receiving MAC coaching had bigger increase when measuring attention and flow and in addition, coaches evaluated their performance higher than the ones in the control group receiving PST coaching (Gardner & Moore, 2007).

Another study found similar results as it studied elite canoeists and compared groups where the other had ACT based intervention and the other received hypnosis intervention. The ACT intervention resulted in better performance in canoeing training than the hypnosis intervention (Villa, Montes, Cueto, Cepeda, & García, 2004).

Sarah Hasker (Hasker, 2010) studied in her doctoral thesis the effectiveness of MAC program compared to PST program. Both of the programs took seven weeks and the voluntary participants were university athletes. The results showed that the athletes in the MAC group gained increased mindfulness skills in the ability to describe and to be non-reactive towards their inner experiences. In addition, the MAC group demonstrated increased experiential acceptance, and they also described an increase in the ability to take action towards their performance goals. These results suggest that the MAC approach may be useful when trying to enhance the performance and that the skills such as mindful awareness and the acceptance of internal states may help athletes attain higher performance level more promptly (Hasker, 2010).

## **1.2 Acceptance and Commitment Therapy**

### **1.1.1 ACT – the basics**

The theory behind MAC derives from the Acceptance and Commitment Therapy (ACT, (Hayes, Strosahl, & Wilson, 1999)), which is a contextual cognitive-behavioral therapy. In traditional cognitive-behavioral therapy, from which the PST derives, human behavior is seen through the links

between cognitions, and the negative thoughts and emotions are aimed to be reduced and controlled (Wolantin, 2005). This is where ACT provides a new perspective.

ACT is based on functional contextualism and on Relational Frame Theory (RFT) (Hayes et al., 2004). According to Hayes, Strosahl and Wilson (cop. 1999) the philosophical and theoretical roots of Acceptance and Commitment Therapy are significantly different from those of mainstream psychology. One of the things that sets ACT apart from the second wave of behavioural therapies, or CBT, is the fact that thoughts and feelings are not tried to be changed even if they are in the core of ACT (Ruiz, 2012). The third feature, pragmatic truth criterion, can be seen in ACT is the importance of goals (Hayes et al., cop. 1999).

Suffering is an inevitable feature of human live. However, psychopathologies are not and there are ways to cope with them. From ACT's perspective psychopathologies usually derive from psychological inflexibility (Hayes et al., 2006). There are six dimensions in psychological inflexibility; experiential avoidance; cognitive fusion; attachment to conceptualized self; inaction/impulsivity; lack of values clarity; and dominance of the conceptualized past and feared future (Hayes et al., 2006). ACT's goal is to promote psychological flexibility by using six core processes that are each linked to a dimension of psychological inflexibility. These core processes are acceptance; cognitive defusion; contact with the present moment; self as context; values; and committed action.

Acceptance is considered to be the opposite of experiential avoidance. It involves an idea of being open to one's own feelings and thoughts without trying to change their frequency or form. In ACT the goal is not to change or eliminate thoughts or feelings but rather to change their functions. From ACT's perspective one's thoughts or emotions are not false but their functions can cause psychological problems (Hayes et al., 2006). Experiential avoidance is a process of avoiding or ignoring one's private events: feelings, thoughts, and bodily sensations, or avoiding situations where unpleasant private events tend to occur (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996a). Hayes, Wilson, Gifford, Follette & Strosahl (1996a) claim that experiential avoidance is an essential part of human language, and therefore often behind psychopathologies. Despite the close relationship with language, experiential avoidance is emotional and behavioural as well as cognitive (Boeschen, Koss, Figueredo, & Coan, 2001).

Cognitive defusion is a set of techniques that aim to change the undesired functions of thoughts. These techniques attempt to diminish the power of language on people's functioning (Hayes et al., 2006). Cognitive defusion can be seen as the opposite to cognitive fusion. Cognitive fusion is when by we combine words with functions by relational learning, and this is sometimes done rather randomly (Hayes et al., cop. 1999). Thus cognitive defusion is closely related to

relational frame theory. The connections we form between words and function are essential to language and cognition but from ACT's perspective they usually act as the source of human suffering as well. These connections are loosened in ACT by cognitive defusion techniques, or what was earlier called "deliteralization" (Hayes et al., cop. 1999).

Contact with the present moment is a typical feature of third wave behavioural therapies. It is also linked to mindfulness. Being in contact with the present moment means being in touch with one's inner experiences as well as the immediate surroundings (Hayes et al., 2006). Mindfulness is also related to the fourth core process; self as context. Mindfulness exercises are used to develop one's awareness of thoughts and feelings without clinging to them, which in other words is self as context. (Hayes et al., 2006) The fifth core process is values. Values are very essential in ACT. The other five core processes aim at helping people to live their lives according to their values. (Hayes et al., 2006) ACT's purpose is not to provide people with values or to help them create them but it's goal is to help people to come in touch with their values again (Hayes et al., cop. 1999). The final core process, committed action ties all core processes together. Just as in other behavioural therapies in ACT clients are expected to not only come to therapy but also to do homework that completes the work done in therapy sessions and brings it to their everyday life context. (Hayes et al., 2006)

### **1.2.2 Areas where ACT has been applied**

ACT has been used to treat people with various psychological and physical problems. Powers, Vörding and Emmelkamp (2009) conducted a meta-analytical study of ACT's effectiveness. They found out that ACT was more effective than control conditions (e.g. waiting list) in all the studies in the analysis that had a control condition. However, they did not find ACT to be more effective than other established interventions. Their review included studies where ACT had been used to treat people with psychosis, worksite stress, pain disability, anxiety and depression, polysubstance abuse, math anxiety, and drug refractory epilepsy. ACT has also been used in helping smoking cessation, diabetes self-management, and weight control. (Powers et al., 2009)

Bond and Bunce (2003) studied how acceptance, one of the core processes in ACT, is related to mental health and job performance among customer service workers. They found out that better acceptance predicts better mental health and job performance in one year's time. They also claim that the higher acceptance the more resources one has to observe thoughts and feelings and on the other hand environment. In their study this meant that workers with higher acceptance could focus

better on their job. Gregg, Callaghan, Hayes and Glenn-Lawson (2007) studied whether ACT education combined with diabetes education could help people coping with diabetes. They found out that even a short acceptance and mindfulness training resulted in better self-management and better diabetic control after three-month follow-up as compared to only diabetes education.

ACT has also been used in other non-clinical purposes such as helping with reducing obesity-related stigma (Lillis, Hayes, Bunting, & Masuda, 2009), improving pain tolerance (Hayes et al., 1999), supporting parents with autistic children (Blackledge & Hayes, 2006) and improving the quality of life for people with drug refractory epilepsy (Lundgren, Dahl, Melin, & Kies, 2006).

Taken together, these findings suggest that ACT can be used not only for clinical populations but also for non-clinical groups. This evidence also suggests that acceptance is the key to fully exploit one's resources as compared to controlling. Therefore, ACT can be proposed to be suitable in psychological coaching for athletes.

### **1.3 Mindfulness**

Acceptance and Commitment Therapy includes several elements of mindfulness (Fletcher & Hayes, 2005), which is one of the methods often used in ACT. Mindfulness and ACT have some theoretical philosophies in common. Relational Frame Theory (RFT) is the philosophy that is in the core of both ACT and mindfulness. There are four interrelated processes in mindfulness: acceptance, defusion, contact with the present moment and self as context (Fletcher & Hayes, 2005). ACT aims to develop and enhance these processes and according to Fletcher and Hayes (2005) these processes may cause the therapeutic changes in ACT. These processes aim to increase psychological flexibility, which is essential to psychological well-being.

There has been some debate on the definition of mindfulness. One of the most cited definitions of mindfulness is by Jon Kabat-zinn: "awareness that emerges through paying attention on purpose, in present moment, and non-judgmentally to the unfolding of experience moment by moment" (Holas & Jankowski, 2013). Though there is no consensus on the definition, the basic elements of mindfulness are rather widely regarded the same: awareness and present-moment attention, acceptance, openness and curiosity. According to Holas and Jankowski (2013), mindfulness can be viewed for example as a meta-cognitive skill, a self-regulatory capacity or as an acceptance skill.

Mindfulness emphasizes a mindful, non-judging awareness and acceptance of the present-moment internal experiences (Gardner & Moore, 2004a). Mindfulness, as well as ACT, views

internal experiences as naturally occurring human events without estimating whether they are good or bad.

### **1.3.1 Effectiveness of mindfulness**

Mindfulness has been shown to be related to increased subjective well-being, reduced psychological symptoms, emotional reactivity and increased behavioural self-regulation (Keng, Smoski & Robins, 2011). According to this Keng, Smoski and Robins (2011), there is also a growing body of evidence showing that mindfulness is positively correlated with psychological well-being, for example a higher level of life-satisfaction, agreeableness, conscientiousness, vitality, self-esteem, empathy, sense of autonomy, competence, optimism and positive affect. And on the contrary, mindfulness has been shown to decrease various negative psychological traits, such as depressive symptoms, neuroticism, absent-mindedness, dissociation, rumination, cognitive reactivity, social anxiety, difficulties in emotion regulation, experiential avoidance, alexithymia, and intensity of delusional experience. A large body of evidence also shows that mindfulness may lead to reduced symptoms of several disorders, such as anxiety, substance-abuse, eating disorders and chronic pain (Hölzel, Carmody, Vangel & co. 2011).

There are several different kinds of mechanisms through which mindfulness interventions can be beneficial to psychological health (Keng, Smoski & Robins, 2011). Mindfulness training has been shown to result in increases in mindful awareness, decentring, exposure, acceptance, attentional control, memory, values clarification and behavioural self-regulation, which may all work as mediators in interventions. According to Keng, Smoski and Robins (2011), mindfulness training can also increase the sense of spirituality, self-compassion and positive states of mind, while decreasing rumination, trait anxiety, posttraumatic avoidance symptoms, perceived stress and overall psychological distress.

Birrer, Röthlin and Morgan (2012) suggest that to perform well the athlete would need to achieve a state called discrepancy adjustment, which can be seen as a quasi-meditative state and can be compared to air-plane autopilot. It consists of self-monitoring, self-evaluating, and adjusting behavior, and can also be seen as the task-focused, present-moment awareness that mindfulness promotes. Keng, Smoski and Robins (2011) suggest that mindfulness practicing increases metacognitive awareness, which means being able to decenter from one's own thoughts and emotions and to observe them in a more objective way. Increased metacognitive awareness is

thought to result in decreased rumination and may therefore predict better clinical outcomes. Another process that may result in better outcomes in mindfulness is exposure. It means intentionally attending to one's experience in a non-judgmental and open way, which may lead to desensitization which, in turn, may turn distressing thoughts and emotions in to less distressing (Keng, Smoski and Robins, 2011). There is a growing body of evidence showing the efficacy of mindfulness in non-clinical use and all of these features may be beneficial in improving athletic performance.

Mindfulness has been shown to be effective in clinical populations in several studies, but in general athletes are psychologically healthy and therefore the effectiveness is not yet justified in sport psychology. There are several different psycho-physiological elements in sports that may disturb the performance (Birrer, Röthlin & Morgan, 2012). These are called performance inhibitors and they include for example unrealistic expectations due to perfectionism, injuries, competition anxiety, anger, and other negative emotions, fear of failure, perceived pressure, and avoidance behavior. In addition, there are personal factors and environmental factors, such as an avoidance coping style, internal failure attribution, and interpersonal problems and life-balance difficulties that may interfere with the performance. These processes are difficult to study and measure, as they are more qualitative than quantitative, and this is at the focus of this study as we try to clarify the processes through which mindfulness and acceptance and commitment -based interventions may be beneficial for athletes.

#### **1.4 Research question**

The main goal of this paper was to clarify athletes' experiences of an acceptance-, mindfulness- and value –based intervention aimed to increase both athletes' performance and well-being. The aim was to describe how satisfied the athletes were on the intervention, what kind of benefit they reported to have gained, and whether completed exercises were associated with how willing they were continue to use the skills learned during the intervention.

## 2 METHOD

### 2.1 Participants

The participants were female floorball players of a team playing in the national league of Finland. The team was recruited by contacting their head coaches. The number of participants in this study was 25. Their mean age was 23.5 years (range =17-38, SD = 5.4). The participants had played in this same team for 2.9 seasons in average (range =0-11, SD = 3.1) and the average in total seasons in floorball was 9.2 (range = 3-18, SD 4.0). 3 of the players (12 %) were goalkeepers and the other 22 (88 %) players were defenders and forwards. 19 of the players (76 %) had experienced some injuries during their years of playing. 15 of the players (60 %) were students, 7 (28 %) were in work life and 2 (8 %) did not inform anything on their work situation. None of the players had previously participated in a psychological coaching program.

Most of the athletes (n=19, 76 %) from the intervention group reported their motivation towards the intervention to be 4 (rather motivated) or 5 (highly motivated) on a Likert scale from 1 (no motivation) to 5 (highly motivated). One of the players (4 %) reported the level as 2 (not so motivated), and four players (16%) reported 3 (neutral / do not know).

### 2.2 Procedure

The data analyzed in this paper consists of an intervention of acceptance- mindfulness- and value based psychological coaching program for athletes. The intervention took place in Jyväskylä in autumn 2013 and it was conducted by two psychology students.

After contacting the head coach of the intervention team, the purpose of the research and practicalities were discussed with the team coaches. Before the intervention began the participants were given a short lecture about the program and asked to fill in the pre-measurement forms that also included an informed consent. After the pre-measurements the intervention team received a 6-week intervention.

The players were divided into four groups by the team's coaches. Each group contained 5 to 7 participants. The psychological intervention included six meetings during a six weeks period (one meeting/week). The meetings consisted of different kinds of exercises, metaphors and discussion. All the meetings were videotaped. The full participant outcome data was

collected two times: before and after the intervention. The main data in this paper consists of a feedback-questionnaire that the players filled in during the second measurements and from the interviews that took place 2-4 weeks after the intervention.

### **2.3 The intervention**

The intervention was based on Acceptance and Commitment Therapy. It included the basic elements of ACT, but it was modified to apply to the context of sports. The manual was created, based on MAC and Acceptance and Commitment Therapy, by Raimo Lappalainen and Vilhelmiina Välimäki. The intervention manual was tested with two athletes from the intervention team during four meetings two months before the actual intervention. The manual was then refined and improved based on the feedback received from the pilot intervention. The intervention included 6 about 1-hour meetings. The leaders of the groups were two psychology students from the University of Jyväskylä. The intervention was started in September 2013 and it lasted until October 2013. The meetings took place before the team's training sessions at KIHU's (Kilpa- ja huippu-urheilun tutkimusyksikkö) office.

An overview of the intervention is presented in Table 1. Each session started with a short mindfulness exercise, but the content of the exercise varied to some extent from week to week depending on the topic of the day. After the mindfulness exercise, the participants were asked to fill in a form where they estimated the time used for homework exercises during the previous week and they were told to write down questions and thoughts related to the exercises. This was followed by a discussion about the key issues of the previous session. After the discussion, the leader presented the key issues of the meeting by explaining and by using examples, exercises and metaphors. Exercises and metaphors were aimed to clarify values, increase value-based actions, and to increase acceptance skills (see Table 2). Each session included two to five mindfulness and acceptance exercises modified to the context of the sport. In the end of each session the issues of the day were discussed and participants wrote down some thoughts and feelings about the day's meeting.

Between the sessions the athletes were instructed to complete homework assignments. These included similar mindfulness and acceptance exercises that were practised during the sessions. The coaches were instructed to remind the athletes about the exercises three times during the floorball training sessions. The idea of these reminders was that the exercises would become a part of training and every-day routine. Information about the amount of homework done was collected at every session with a short questionnaire where the athletes estimated how many times they had used the exercises between the sessions in trainings, during games and in everyday-life.

TABLE 1. The intervention

	<b>Title</b>	<b>Description</b>	<b>Homework</b>
<b>1<sup>st</sup> meeting</b>	<i>Introduction</i>	Going through the goals and basics of the method (ACT) and this programme.	<ul style="list-style-type: none"> <li>• Perspective taking sense of self (observing breathing and bodily sensations)</li> </ul>
<b>2<sup>nd</sup> meeting</b>	<i>Mindfulness skills</i>	Basics of mindfulness, cognitive defusion, observers point of view.	<ul style="list-style-type: none"> <li>• Thanking one's mind for its thoughts</li> <li>• Perspective taking sense of self (observing breathing and bodily sensations)</li> </ul>
<b>3<sup>rd</sup> meeting</b>	<i>Choices and value-guided action</i>	Value analysis, becoming aware of one's values and that life is full of choices and options	<ul style="list-style-type: none"> <li>• Observing breathing, bodily sensations and thoughts</li> <li>• Applying different methods to find one's own way to be mindful</li> </ul>
<b>4<sup>th</sup> meeting</b>	<i>Acceptance</i>	Basics of acceptance, combining acceptance with observer's point of view, self as context.	<ul style="list-style-type: none"> <li>• Welcoming of unpleasant thoughts and feelings</li> <li>• Observing breathing, bodily sensations and thoughts</li> <li>• Thanking one's mind for its thoughts</li> </ul>
<b>5<sup>th</sup> meeting</b>	<i>Mindfulness skills and acceptance</i>	Revision of mindfulness and acceptance skills, bringing sports-related themes into exercises.	<ul style="list-style-type: none"> <li>• Welcoming of unpleasant thoughts and feelings</li> <li>• Observing breathing, bodily sensations and thoughts</li> <li>• Thanking one's mind for its thoughts</li> <li>• Choosing to be present</li> </ul>
<b>6<sup>th</sup> meeting</b>	<i>Commitment and appliance of the skills</i>	Choosing one's attitude, becoming aware of the consequences of one's attitude and choices.	<ul style="list-style-type: none"> <li>• Welcoming of unpleasant thoughts and feelings</li> <li>• Cognitive defusion</li> <li>• Shifting awareness e.g. from bodily sensations to thoughts</li> <li>• Choosing to live in the present</li> </ul>

## **2.4 The interview and the feedback-questionnaire**

The individual interviews took place 2-4 weeks after the intervention and they were recorded. The interview was half-structured and it was based on a feedback-questionnaire that the players filled during the post-intervention measurements. All of the players filled the questionnaire and 17 participated in the interview after the intervention. The interview contained questions on three different areas: the intervention, athletic performance and training and over-all well-being. The players were asked for example how satisfied they were with the intervention, how much did the intervention affect their training and sport performance and how did they benefit from the intervention. The questions are listed in table 2.

**TABLE 2. The interview**

Topic	Question	Answer options
Intervention	<p>How satisfied were you with the intervention?</p> <p>Did the intervention answer to your expectations?</p> <p>What motivated you to participate?</p> <p>What sort of benefit did you get from the intervention?</p> <p>Which part of the intervention did you see as the most important to you?</p> <p>Which was the most challenging?</p> <p>Was the duration of the intervention convenient?</p> <p>Would you recommend the intervention to other athletes?</p> <p>Do you think you will use the learned methods and skills in the future?</p>	<p>Scale (1-5)</p> <p>Yes/No</p> <p>Open</p> <p>Options</p> <p>Open</p> <p>Open</p> <p>Yes/No</p> <p>Yes/No</p> <p>Yes/No</p>
Athletic performance	<p>How beneficial was the intervention to your training?</p> <p>How should the intervention be developed to be more useful in floorball?</p>	<p>Scale (1-5)</p> <p>Open</p>
Overall well-being	<p>How beneficial was the intervention was to your well-being?</p>	<p>Scale (1-5)</p>

## 2.5 Measurements

Well-being and sport performance were measured before and after the intervention using the following measurements:

**AAQ-II, Acceptance and Action Questionnaire**, is a self-report measure evaluating experiential avoidance. The 7-item version was chosen the responses changing from 1 (1=never true) to 7 (7=always true) on a Likert scale. Responses are coded so that the higher the score, the bigger the experiential avoidance and the smaller psychological flexibility. The scores differ from 7 to 49. AAQ-II has great validity and reliability (Bond et al., 2011).

**PSS, Perceived Stress Scale**, is a measure assessing self-reported stress in general. The measure has 10 questions and the score can differ from 0 to 40. The questions are being answered according to experience of stress during the past month and responses are coded on a Likert scale changing from 0 never to 4 very often. Some of the responses are coded backwards. (Golden-Kreutz, Browne, Frierson, & Andersen, 2004)

**Self-confidence** is a self-reported measure of self-confidence in life in general but in this case it was used for measuring self-confidence in sports. One reports the present level of self-confidence on a scale from 0 to 100, 100 being the highest level of self-confidence and 0 the lowest. One reports the level of self-confidence by evaluating the feelings and experience of confidence in everyday sport-related situations. (Ojanen, 2001)

**Athletes Self-Rating Scale of Performance** is a measure that assesses athlete's self-rated level of performance. The rating scale consists of 10 items each responded on a 5-point Likert-scale that ranges from (1) very poor to (5) very good. The rating scale is a direct measure of athletic performance and includes 10 variables of performance which are: overall athletic performance, risk-taking, concentration, team spirit, motivation, quickness, determination, endurance, mechanics, aggressiveness and co-operation skills. A definition of each variable was provided to assist in rating. The scale was designed based on Hasker's similar performance rating scale (2010). The scale was translated into Finnish and the variables were remodelled to fit this study. This paper includes only the overall performance.

**MHC-SF**, Mental Health Continuum Short Form is derived from the long form (MHC-LF), which is a measure of emotional, psychological and social well-being. MHC-SF consists of 14 items, which represent the most prototypical definition of each facet of well-being. Six of the items are representing psychological well-being, three items are presenting emotional well-being, and 5 of the items represent social well-being. Responses are coded on a 6-point Likert scale and the variance is from (0) not at all to (5) every day when evaluating one's feelings during past month. Overall scores can differ from 0 to 60, 60 being the best possible score instantiating very good mental health and well-being, and 0 the worst score. (Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011)

### 3 RESULTS

TABLE 1. Mean values (standard deviation) for stress, psychological flexibility, wellbeing, self-confidence and self-rated performance at pre- and post-measurements. Values for the t-test, and with-in group effect sizes are also presented (Hedge's *g*). Table 3 shows the effects of the intervention on stress, psychological flexibility, well-being, self-confidence and self-rated performance. There was a significant increase in self-confidence. In other measures the changes were small and non-significant. The with-in effect sizes were also small.

	<b>Pre</b>	<b>Post</b>	<b>t</b> <b>(df=24)</b>	<b>Sig</b> <b>Mean (SD)</b> <b>p</b>	<b>Post</b> <b>Mean (SD)</b> <b>g</b>
PSS	14.72 (6.09)	13.40 (5.26)	1.33	0.20	0.18
AAQ-II	15.52 (5.77)	14.68 (5.01)	1.01	0.30	0.20
MHC-SF	50.04 (11.56)	51.08 (11.35)	-0.65	0.52	-0.09
Self-Conf.	70.20 (22.14)	75.52 (14.65)	-3.55	0.00	-0.25
S-Perform.	3.80 (0.65)	3.80 (0.58)	0.00	1.00	NaN

#### 3.1. The interview and the feed-back questionnaire

In the pre-measurements 20 of the players (80%) reported that on a scale from 1 to 5, their motivation towards the intervention was at least a 4 ("I'm quite motivated") and only one (4%) reported a 2, "not that motivated". Also, a majority of the players (80%) reported that they were satisfied with the intervention and only 1 of the players (4%) reported to be unsatisfied. 10 of the players (40%) reported that the intervention was in line with their expectations and 13 (52%) reported that it was not. 18 of the players (72%) found that the intervention affected their training or sport performance positively and only 1 of the players (4%) reported that there was no effect. About half of the players (n=13, 52%) reported that there was no significant change in their general well-being during the intervention and 11 players (44%) reported that there was a slight positive change.

21 of the players (84%) reported that they found the duration of the intervention suitable, but there were 3 players (12%) who would have preferred it to last slightly longer. 18 of the players (72%) reported they could recommend the intervention to other athletes and none of the players told they could not. Also, most of the players (n=17, 68%) reported they would use the skills they learned during the intervention in the future and only 2 (8%) reported they would not continue using them.

CHART 1. Experiences and self-rated benefits of the intervention (number of the players' responses to the question of the benefits of the intervention).

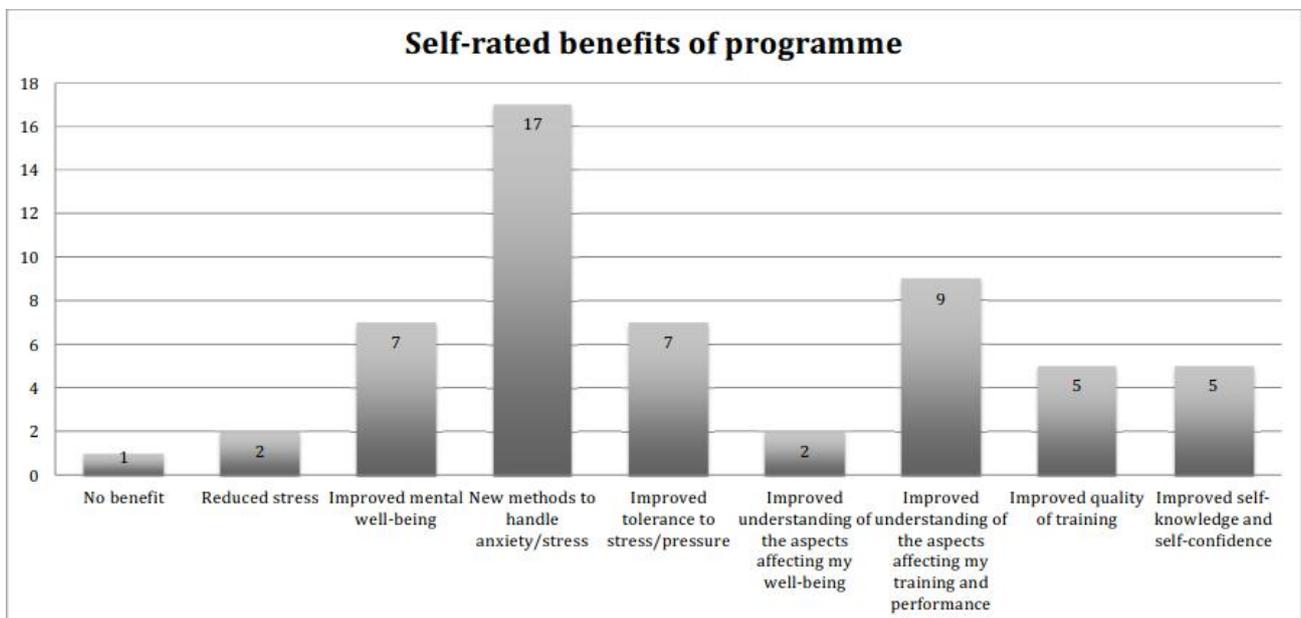


Chart 1 shows what kind of benefits the players reported from the intervention. There were 9 answering options and the players were able to choose as many as they liked. As can be seen from the chart, 17 of the players (68%) reported they learned new methods for handling anxiety or stress. One third of the players (n=9, 36%) reported they attained improved understanding of the aspects affecting their training and sport performance. Also, about one third of the players (n=7, 28%) reported their mental well-being had improved and their tolerance of stress or pressure had improved (n=7, 28%). Only 1 (4%) of the players reported she had no benefits from the intervention.

CHART 2. Experiences (%) of the benefits of the different aspects of the intervention.

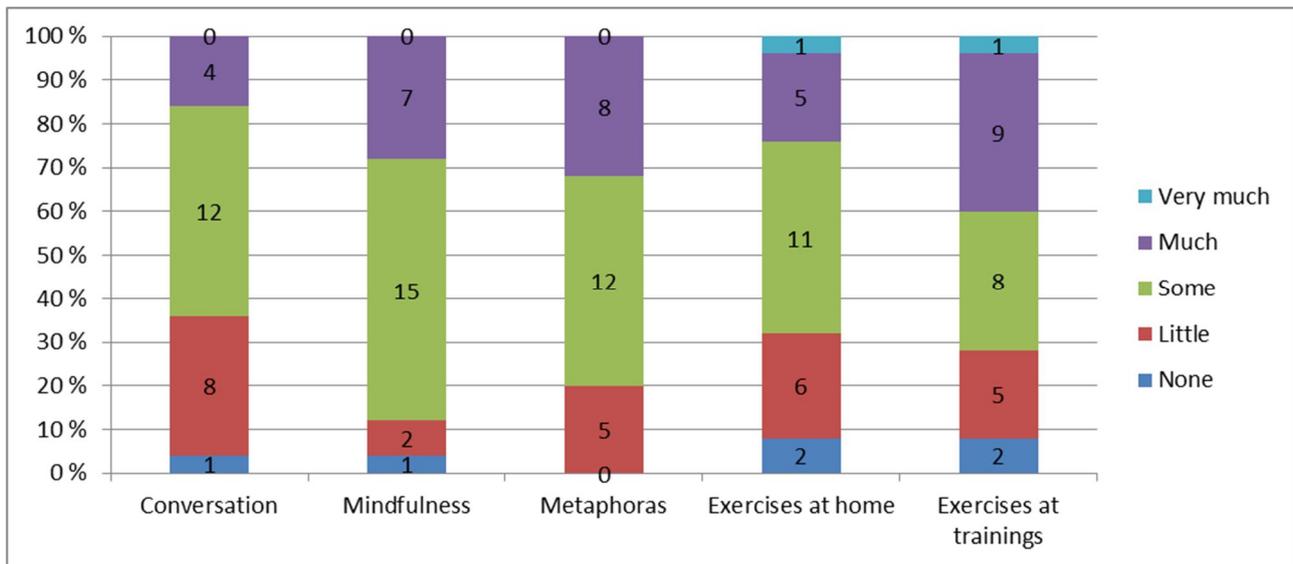


Chart 2 illustrates how the players reported to have benefitted from different aspects of the intervention. A great majority of the players (n=22, 88%) reported that on a scale from 1 to 5 (none – very much) they had at least some benefit from the mindfulness exercises. 20 of the players (80%) reported at least some benefit from the metaphors, as well as 17 players (68%) from the exercises done at home and 18 (72%) from the exercises done during trainings. Metaphors were the only part of the intervention from which all of the players reported to have benefitted at least to some extent. The answers were most contradictory concerning the conversation, as 9 players (36%) reported to have none or only little benefit and only 4 players (16%) reported to have much benefit from it.

### 3.2 Sport-related factors

During each meeting of the intervention the players reported how many times they had applied the exercises between the sessions. The number of use of the exercises varied from 9.60 to 138.0, the mean = 6.50 and the standard deviation = 34.10 (n=25). The mean number of applied exercises/week varied from 0.53 to 7.67, mean = 3.67 and the standard deviation = 1.89, (n=25).

A moderate positive correlation was observed between the total number of performed home exercises and whether the player was willing to continue using the learned skills ( $r=0.46$   $p=0.02$ ,

n=25). Also, a moderate positive correlation was observed between the sum of performed home exercises and the change in self-confidence from pre-measurement to post-measurement ( $r=0.47$ ,  $p=0.01$ ,  $n=25$ ). In addition, a moderate positive correlation was observed between the change in self-rated performance and self-confidence ( $r = 0.44$ ,  $p<0.05$ ,  $n=25$ ).

Very low correlations were observed between motivation to participate in the intervention and the following variables: stress, psychological flexibility, self-rated overall performance, satisfaction, completed exercises, age and experience in floorball ( $r=[-0.09 - 0.34]$  ( $p=[0.42 - 0.87]$ ). Very low correlations were also observed between satisfaction to the program after the intervention was completed and all the previous variables ( $r= [-0.16 - 0.21]$ ,  $p=[0.31 - 1.00]$ ). None of the relationships were statistically significant.

### 3.3. Testimonials

Tables 2, 3 and 4 show examples of testimonials collected from the players from the interview and the questionnaire.

TABLE 2. Testimonials describing focusing attention

Number	Testimonials
1.	<i>Even the fact that the intensity of the trainings has come down a bit, and we were able to stop and think for a moment, seems to have improved focusing attention.</i>
2.	<i>Through calming it has been easier to focus in trainings and during games.</i>
3.	<i>During trainings you could see that the whole team's concentration has improved, even when something or someone fails.</i>
4.	<i>Sometimes it was already sort of automatic, that I did a short focusing exercise during training sessions.</i>
5.	<i>Often you just dwell on your own thoughts and if you have an image that you're doing bad with things, it won't get you anywhere, at least with the performance. This has helped me to focus more my attention on the moment.</i>

Retaining focused attention is essential in a sport like floorball. As we can see from the testimonials in table 2 the focusing exercises have helped many of the players in different ways. Some of the players found that the moment for individual exercises during training sessions was a good way to

calm down and regain focus. Towards the end of the intervention, some were already so advanced with the focusing exercises that they were able to apply them already during training sessions (testimonial 4). From testimonial 5 we can see that focusing skills can be even more useful when combined with mindfulness and attention skills.

TABLE 3. **Examples of individual applications of the exercises.**

Number	Testimonial
1.	<i>Sometimes it felt that the minute for individual exercises would interrupt the training when you had to stop and just sit still. It was good, when in the end of the program the exercises were done along with other activities, so it didn't take time from training.</i>
2.	<i>Sometimes we took a moment for individual exercises in the locker room before the game. It worked really well and it could be good to do in the future, too.</i>
3.	<i>I'm not sure if it has to do with the intervention directly, but I feel that I don't have to panic about sport performance that much anymore and that's why I've been playing way better.</i>
4.	<i>As I'm so critical towards myself, I've used these exercises even during games. Often for example, I've sat on the bench going through some of those exercises while wondering why I'm not playing.</i>
5.	<i>When you had a feeling that you're a worthless player, you learned to see that it's just a thought.</i>
6.	<i>The acceptance point of view has helped me with self-criticism. I've been able to think for example about my personal values concerning why I'm playing in the first place.</i>

As we can see in table 3 some of the players had problems with self-criticism and negative thoughts (testimonials 3, 4 and 5). Many of them benefitted from the part of the intervention that focused on the acceptance point of view. And as the testimonials 3 and 5 suggest, becoming aware and accepting those negative feelings helped them to become more confident about themselves as a player (e.g. testimonial 3 “...*I feel that I don't have to panic about sport performance that much anymore...*”). Testimonial 2 above describes how the team started to apply the exercises before the games. Interestingly, this practice was not instructed by the coaches but by the players themselves.

TABLE 4. Overall well-being and general observations of the intervention.

Number	Testimonial
1.	<i>I have noticed that even in daily life situations it has been easier to let go with unpleasant thoughts.</i>
2.	<i>The benefits of the program have appeared in greater degree outside the sport, but they were reflected into floorball. When my self-confidence has improved, it has helped me with training, too. And when life in general is going well, you can see the difference also in sport performance.</i>
3.	<i>I think these skills can easily be applied outside the sport, e.g. if you have things going on in your head that irritate you, it's easier to accept that these are just feelings and then you're just like, "bring it on".</i>
4.	<i>Through breathing and focusing on the bodily sensations, you were able to move your thoughts elsewhere, when you got agitated.</i>
5.	<i>They always say that you should get your head straight, but can you really do that if you don't have the proper tools for it?</i>
6.	<i>At first, many of the players were rolling their eyes like, "what is this?", but when I've talked to them later on, they've said that this has actually been useful.</i>

As can be seen in testimonials 1, 2 and 3 in table 4 the intervention affected the players' well-being also outside the sport (e.g. testimonial 1 "*The benefits of the program have appeared in greater degree outside the sport...*"). Improved self-confidence, accepting one's inner experiences and openness towards them helped some of the players with their daily life. Quote 4 suggests that even simple focusing and breathing exercises could help with focusing attention and dealing with emotions. Quote 5 on its behalf highlights the core of the problem with sports and psychological coaching: there is a lot of pressure the athletes have to deal with and still many are left out with any kind of aid when it comes to the psychological skills needed in handling it.

There were relatively few strictly negative comments on the intervention that came up in the interviews and the feedback-questionnaire. In table 4 are collected some critique and developmental ideas from the players.

TABLE 5. Critique on the intervention.

Number	Testimonial
1.	<i>It might have become tiring, if the program would've lasted longer. Maybe a longer time span would've brought good results, but after such an intensive start, the meetings could've been less frequent.</i>
2.	<i>There could've been a lot more conversation.</i>
3.	<i>I'm not such a conversational person, even though I liked to listen to other people's thoughts. I wouldn't have wanted there to be more conversation.</i>
4.	<i>The mindfulness skills were challenging. I got injured during the program, so observing bodily sensations just reminded me about the pain.</i>
5.	<i>During the exercises I often felt I didn't understand or wasn't sure what the point was.</i>
6.	<i>During the trainings it was particularly hard to take the observer's point of view in the middle of training.</i>
7.	<i>It would've been good if the psychological coaches would've come to the trainings to get a more clear impression of how things work in there.</i>
8.	<i>It would be good if the training wouldn't stop here that we would at least continue with the coach's reminders during trainings.</i>
9.	<i>I couldn't focus on the individual exercises if we had to do something else at the same time. My thoughts would always shift into training.</i>
10.	<i>Sometimes I couldn't keep up with the metaphors and stuff, especially the longer ones. I was often physically so tired that the more practical exercises felt easier to do.</i>
11.	<i>In the beginning I had inner motivation, but when the program came closer to the end, it started to feel a bit like a duty.</i>

What sticks out from the testimonials in table 5 is how differently the intervention was experienced by the players. For example testimonials 2 and 3 show that some of the players preferred the conversational parts of the intervention, some did not. Also the minute for the individual exercises during trainings divided the players in to two groups: some would have needed the moment to be calm and focused only on the exercises (quote 9), but others who were more advanced with the exercises felt it was unnecessary (table 2, testimonial 1). There were considerable differences in how advanced the players were with the mindfulness and acceptance skills at the end of the intervention, and how they experienced them. Some of the players had attained a level where they

were able to apply the skills quite automatically (table 1, testimonial 4). Testimonials 4 and 10 in table 5 suggest that some of the players had problems with focusing attention to the exercises or some had difficulties understanding the purpose of the exercises.

## 4 DISCUSSION

This study aimed to investigate whether an acceptance-, mindfulness- and value –based intervention would be usable for psychological coaching for athletes. The purpose was to investigate whether a six week program of psychological coaching would have positive effects on psychological and sport-related features of floorball players. We wanted to investigate players' experiences and possible benefits of the program as well as suggestions to develop the program further. We chose to focus on the experiences of the players and the way they evaluated the intervention.

We chose to focus on the subjective experiences of the players in this study because we found that the quantitative data might not be sufficient, as it was rather challenging to choose suitable measures in the first place. We thought the quantitative data would tell us what sort of changes there might emerge, but it would not tell us how. Also, we thought that a more subjective point of view might help us understand the processes behind the results.

Qualitative measurements in sport psychology are not very common and qualitative data collection techniques have become more used in sport psychology just lately. For long, the main focus was in sport performance and the quantitative aspects. According to Culver, Gilbert and Sparkes (2012) there was an increase from 17.3% to 29.0% in the first decade of 21st century in the number of qualitative data collection techniques. This paper suggests that qualitative research in applied sport psychology might be essential. Through qualitative research it is possible to observe the processes through which the benefits of the intervention may emerge. In addition, the qualitative data provides some perspective on how this intervention could be developed onward and what kind of quantitative as well as qualitative data collecting system should be used.

The results suggested that most of the players were satisfied with the intervention and they learned new psychological skills to deal with thoughts and emotional reactions associated both with sports. It seems that the skills were mainly learned through the metaphors and the exercises, and that completing home exercises was essential. The results showed that the amount of exercises applied at home and during training was related to the improvement of self-confidence. The link between homework and improved general well-being, has been shown to exist in previous research (Kazantzis et al., 2000). The improvement of self-confidence was one of the most important findings in this study and it was also related to the change in self-rated performance. The results

show that many of the players learned new skills to handle stress and anxiety and their understanding of the aspects affecting their sport performance was improved. Learning to handle stress, anxiety, and other performance inhibitors may lead to improved sport performance (Birrer, Röthlin & Morgan, 2012). In addition, some of the players reported that their mental well-being and their tolerance toward stress and anxiety were improved. These findings support the idea that mindfulness training may result in improved self-awareness and enhance focusing and sport performance, which has also been supported in previous research (Gardner and Moore, 2004a). Some of the players reported benefits of the intervention in everyday-life, which is also important, as sport performance may also be disturbed by stress or anxiety deriving from daily life. This can also be seen as a benefit that traditional PST skills might not be able to achieve. There were considerable differences between individuals in the way they learned the skills and the way they were able to apply them, but with the exception of one player, all the participants benefitted to some extent of the intervention. This is in line with previous studies, which suggest that mindfulness training may lead to various positive changes in psychological well-being (Keng, Smoski and Robins, 2011).

This study suggests that an acceptance-, mindfulness- and value –based approach would be suitable for psychological coaching in a sport-context. The results showed that most of the participants found especially the mindfulness exercises and the metaphors as useful. Although the quantitative measures were not able to illustrate significant benefits of the program, the participants themselves found the intervention useful and they described various benefits from it. The problematic issues, for example the lack of individual approach, were more related with the practicalities of the intervention than the psychological approach itself.

### **Limitations of the study**

There are several limitations in this study and various factors that may have affected the final results. The sample size in this study was small, as the intervention group in this research consisted only of 25 participants. The group was also rather heterogeneous in relation to their background information, which can also limit the generalization of the results. This study included no control group. Thus, it is possible, although unlikely, that the observed changes are not a result of the intervention. For example, the effects of measurements were not controlled. However, it would have been practically very difficult to provide the intervention for only some of the players.

Group interventions always have both pros and cons. They are cost-effective and the peer-support is a big advantage, but at the same time it is challenging to take the needs of an individual into account. The findings from the interview and the feedback-questionnaire indicated that there were considerable differences between individuals in the way they experienced the intervention and the way they were able to apply the skills they learned. This was also shown in the numeric data. The intervention lasted for a rather short time, only six weeks, and it might be that a longer time period would have brought out different kind of results. Learning acceptance-, mindfulness- and value-based methods takes time and due to the fast-paced nature of floorball, applying the skills during the sport performance requires some stage of automatization. The findings from the interview indicate that some of the players might have benefitted from a longer duration. 17 of the players participated in the interviews and some of those who did not were the ones who did not benefit as much of the intervention. Interviewing those players might have given us a better view on the problems of the intervention.

Measurements are a challenge in sport psychology and it was one of the main problems with this study, especially with the quantitative data. The quantitative measures were selected in purpose to bring out the possible psychological and sport performance related outcomes as thoroughly as possible. Measuring sport performance is particularly difficult in a team sport such as floorball, especially when there are no detailed statistics on each player's performance. The results in this paper indicate that there are several problems with selecting the right measures to detect the psychological and sport-related outcomes.

This study suggests that there are some aspects in the intervention that would need to be developed. The duration of the intervention can be questioned, because the acceptance-, mindfulness- and value –based exercises are based on learning new skills through new personal experiences and it takes time to learn the method. Most of the participants in this study found the duration suitable, but there were some who would have needed more time. The group discussions were also somewhat problematic, as some of the participants found them very useful but there were many who did not.

According to some researches, in mindfulness and acceptance based approaches, it seems that individualizing the intervention would be essential (Bernier, Thienot, Codron & Fournier, 2009). In this intervention there were no individualized treatment components and it might have been challenging to develop these components. According to the notable differences in the ways the players were able to learn and to apply the methods, a more individual perspective could be beneficial, though it is challenging to realize in a group intervention.

Acceptance-, mindfulness- and value-based interventions require that the intervention leaders are well acquainted with the theory background and that they have used mindfulness and acceptance exercises as the method is very experimental and it is difficult to teach the skills otherwise. Interventions of the same psychological approach often follow a manual similar to the one in this study. The manual used in this study consists of mindfulness and acceptance exercises and metaphors. It is relatively easy to follow when one is familiar with the basic principles of an ACT model. It can be argued that acceptance-, mindfulness- and value-based psychological coaching is a method to be used by psychologists and experts of psychological coaching, but for coaches who are experts in only a specific sport, it may not be the best possible method.

In the future it would be interesting to study acceptance-, mindfulness- and value-based interventions in other sports, both individual and team sports, and with male participants. With a larger sample size, randomized study groups and well selected measures, a better understanding of the usability and possible applications of the method could be achieved.

Altogether, this study provided important new information of the use of acceptance-, mindfulness- and value-based psychological coaching. There is a need for new approaches and methods in the field of sport psychology, since PST has been for a long time the only widely used method within sport psychology. This study suggests that the acceptance-, mindfulness- and value-based approach could provide a new perspective.

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