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Mindfulness-Acceptance-Commitment (MAC) intervention with the cue words twist: Boosting ice hockey goalie's psychological flexibility, performance consistency and self-confidence in competitive performance condition

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Abstract

The aim of the current case study was to improve professional ice hockey goalie's mental proficiency by using intervention based on Mindfulness-Acceptance-Commitment (MAC) and cue words approach, applied to the respective context. The intervention, administered by the consultant, focused on ameliorating athlete's psychological flexibility and providing adaptive coping methods in order to increase self-confidence and performance consistency. Program effectiveness was assessed by performance measure (saving percentage), self-evaluative mental insight measure (subjective questionnaire) and feedback provided by the athlete. Results of the intervention program suggest that the MAC approach with cue words addition was an effective medium to more confident, consistent performance due to increased control over mental states and reduced maladaptive cognitive appraisals.

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Context

Background

For the duration of this case study I was completing an undergraduate level, double degree of Psychological Science and Exercise Science in Griffith University Gold Coast Australia. Although, throughout my Finnish background I did some occasional psychological consulting for a few Finnish athletes. Therefore, it should be stated that most of the task relevant groundwork, analogous to this article, is appraised in a Finnish context. Furthermore, the majority of these athletes can be viewed as my previous teammates or competitors from junior career in the sports of golf and ice hockey. Thus, these people approached me mostly because of my student status supervening an easy approach compared to trained psychologists or sport psychologists. It can be also mentioned, that sport psychology is not as prevalent in Finland than in other Western societies, and the importance of mental aspect of sports in Finland has more of an increasing trend (Jyväskylä University). Notwithstanding my absent psychologist status, I can be seen able to offer my consultancy and support for athletes to improve their performance with my knowledge of psychology and exercise education.

Consultant Philosophy

In sport psychology context, I am aiming to assist athletes to maximise their performance by optimising their mental proficiency in not only with the particular sport but also in their circadian life. The optimised performance is aimed to be accomplished by providing various arousal control methods, positive experiences, coping methods and comprehensive self-awareness. Importantly, optimised performance in this context is defined as intense concentration of attention

induced mastery like state, which can reach the unconscious level of automatic functioning, commonly referred to as zone or flow (Csikszentmihalyi, 2014). Notwithstanding the difficulty in reaching the flow state (Csikszentmihalyi, 2014; Drosman, 2015), it is an accommodating term to apply when discussing about ideal performance, throughout the suggestion of several athlete's experiencing the described symptoms of flow when performing on one's optimal level (Jackson & Marsh, 1996; Csikszentmihalyi, 2014).

Firstly, with the relation to fulfilling basic human needs of competence, autonomy and social relatedness, positive experiences have shown to be one supportive predictor for the aimed optimal performance (Schüler & Brandstätter, 2013). Thus, fulfilling the basic needs of self-determination theory (SDT; Deci & Ryan, 1985) can proportionately assist in creating an opportunity for automatic execution and euphoria-like state, especially in sports, but also in other human life domains (Drosman, 2015). More specifically, the fulfilment of basic needs can be seen as a prerequisite for optimal performance (Ntoumanis, Thøgersen-Ntoumani, Deci, Ryan, Duda & Williams, 2012), relatively in the context of achieving sport psychology (Kowal & Fortier, 1999). Secondly, thinking increased situational excitement in competitive sports as a naturally occurring phenomena, it is important to investigate emotion-related performance arousal and the respective effects. Uncontrolled arousal levels can have a detrimental effect on performance (Mallet & Hanrahan, 1997), and the importance of being prepared to control these arousal levels with coping strategies and mental plans has been demonstrated by Orlick and Partington (1988). Therefore, I would like to be able to accompany athletes with several science-based coping methods to facilitate their performance towards to more adaptive performance, with the relation to concept of increased mental toughness by Gucciardi and Gordon (2011). Furthermore, according to Gardner and Moore (2007), an athlete's self-awareness is required to be on a certain level before effectively being able to apply coping methods on performance. Overall, Gardner and Moore's (2007) Mindfulness-Acceptance-Commitment (MAC) approach effectively exerts self-awareness and arousal control in

sport psychology when aiming to optimal performance, and can be summarized as a philosophical approach to the aims of this case study.

The case

A year prior to the intervention I had a conversation with my old teammate (23 year old male), who had become a professional ice hockey goaltender playing in the top Finnish ice hockey league (Liiga). I explained him about my studies in the field of psychology and sports. He instantly became interested to see if I would be able to assist him with the mental aspect of the professional sport. He explained having some consistency issues that resulted from variability in pre-game warmup routines and arousal imbalances. Thus, some of the routines had become even superstition-like rituals (e.g. executing specified number of lunges during off-ice warm up), without which he could not perform consistently, or on the level he wanted. Furthermore, if he did not have an access to certain facilities (e.g. specific route to run or area to do dynamic warm up), he did not feel physically prepared to the game, and this influenced his self-confidence maladaptively.

Furthermore, arousal imbalances were displayed in lack of motivation of non-important practice games and infrequent overexcitement. In addition, subjectively, he was not getting sufficient mental coaching for controlling arousal levels and coping with maladaptive thoughts due the low level of resources. Therefore, he was trying to overcome these issues by himself and asked if I could assist him to improve his performance stability from my educational perspective. I replied that I was more than happy to work with him within acknowledgement of my student status. I also informed him that I was conducting a sport psychology course in the university the following year and it would be ideal to consult the professor of that course, a trained sport psychologist, in accordance to this project. In conclusion, we decided to aim on co-beneficial process of enhancing his performance with my assistive self-learning approach.

Needs analysis & the problem

Firstly, it can be stated that we were not aiming to change maladaptive behaviours but focus more on increasing the consistency and self-confidence in substantial performance situations. Nevertheless, from a research point of view, inconsistency and maladaptive cognitive appraisals can be proclaimed as performance degrading behaviours, respectively. Consequently, it was aimed to provide coping and controlling methods for fluctuating emotions and performance instability. Moreover, with the consultancy of my sport psychology professor and thorough literature review, MAC (Mindfulness-Acceptance-Commitment) approach (Gardner & Moore, 2007), with the use of cue words in the commitment phase, was decided to be used to enhance athlete's performance.

MAC approach by Gardner and Moore (2007) can be used to investigate athlete's own affective states and arousal in the competitive situation. MAC proceeds towards the idea of coping with negative thoughts in aim of reducing the uncertainty related anxiousness during the performance, slightly differently than earlier propositions. Thus, instead of teaching the client to think and feel better by trying to rule out the negative thoughts, Gardner and Moore (2007) suggest that performer should maintain the attention and poise without need to reduce, limit or otherwise control this naturally occurring internal negative noise. In addition, these negative mind states should be processed thoroughly in manner of being able to comprehensively refocus. The athlete no longer needs to actively reject the maladaptive thoughts and optimally this would balance the arousal states. Thus, with trained help, this could be a functional method when aiming to the athlete's mental proficiency and performance stability.

Furthermore, the process consists from three parts: Mindfulness, Acceptance and Commitment. Mindfulness is commonly defined as a ¨paying attention in a particular way: on purpose, in the present moment and non-judgementally¨ (Kabat-Zinn, 1994, p.4). In this paper's application of mindfulness strategies, the performer is asked to be able to bring negative or insecure thoughts back to conscious from the border of unconscious, instead of using maladaptively shown

experiential avoidance (Zhang, Si, Chung & Gucciardi, 2016). Thus, people are naturally primed to try suppress and forget negative thoughts and may have even been trained to do so more effectively in order to refocus faster, especially in sporting context (Baer, 1996; LeMoult, Hertel, & Joormann, 2010). However, the latter research supports the idea of mindfully accepting thoughts in process to be able focus more consistently and effectively (Gardner and Moore, 2004; Hahs, 2013; Vehviläinen, 2012). Moreover, in the acceptance phase, the performer is implored to accept these possibly insecure thoughts as naturally occurring (all performers experience adversity) and ideally be able to use them as a resource for refocus and commitment. The commitment part consists from directing the focus on associative task, not dissociative outcome, and committing to this with concentrative emphasis (Garner & Moore, 2007).

In addition, cue words can be used as a specified tool to this commitment phase by directing the refocus to associative, external agents (Mallet & Hanrahan, 1997; Perkos, Theodorakis & Chroni, 2002). Ideally, cue words would be associative with the task and positively reflect on performer's strengths (Mallet & Hanrahan, 1997). It has been shown that the correct use of cue words can lead to the optimal focus by reducing verbal-linguistic processes of left hemisphere (Crews & Lewis, 1993). So, paradoxically, thinking specific words can result a reduced cognitive activity, which is needed for optimal focus and performance when pursuing towards the state of ¨flow¨(Czikzenmihalyi, 1993). Essentially, the worry and fear of failure caused by negative thoughts increases the cognitive activity followed by progressively increased downward spiral of negative thoughts. These kind of worry loops are one of the primary reasons disrupting the automated execution of skill set with a large increasing effect on capacity of self-regulation (Hatzigeorgiadis, Zourbanos, Galanis & Theodorakis, 2011), and therefore should be reductively intervened with mental skill training (Shoenfelt, 2016). To summarize, more consistent performance and reduction of maladaptive cognitive appraisals are aimed to achieve with the MAC approach

providing an active coping mechanism for challenging situations, and cue words assisting commitment phase when working towards optimised performance.

Method

Slightly modified self-evaluation part of Follow up tool for ice hockey goalies (Vehviläinen, 2012; see Appendix B) with an addition of stress level measurement, and recorded saving percentage were used to examine the effects of intervention. Data was recorded from fourteen games prior and sixteen games after the intervention for the duration of nine-month ice hockey season. The follow up tool is designed to predominantly examine ice hockey goalie's mental aspect of performing. The idea of slightly modified self-evaluation part in Follow up tool is to collect subjective data about performer's mental insights during the competitive sport situation. It consists of six items measuring stress level (1), self-confidence (2), feeling (arousal) before the game (3), feeling (arousal) during the game (4), mind control (focus resilience) during the game (5) and overall anxiety in performance situation (6). The added variable of stress level (1) was measured with scale ranging from 1 (no stress) to 7 (extreme stress). The other five existing items (2, 3, 4, 5 and 6) were assessed with a seven-point, likert-like scale ranging from 1 (weak) to 7 (strong). Notably, the stress level (1) and overall anxiety (6) measurements can be seen controversial to analyse due the different levels of ideal stress and anxiety to perform optimally (Arent & Landers, 2003), but the other four variables display the idea of score 7 indicating the optimal mental state, respectively. The athlete was requested to record a value for these six items after every game he played. Saving percentage (%) was recorded from the official web page of Liiga. Thus, the saving percentage is calculated by dividing the shots saved by the goaltender, by the shots towards the net goaltender is prevent to get scored in. Saving percentage can be seen as specified, individualized measurement for the goaltending performance, independent from team performance.

Intervention

The intervention plan for the current case consisted of seven step MAC program with a little modification throughout the addition of cue words rationale to the commitment phase. The process was planned to be conducted over a ten-week period: one 1-2-hour session per week with a one week break after three weeks, and allowing some flexibility for the seven steps of MAC modules. Communication was planned to do mostly face-to-face, but because of the travelling of the athlete and occational long distance, some of the consultations were conducted over the phone or videocall. It was explained to the athlete that the intervention would not focus on the suppression of maladaptive thoughts, but instead becoming more aware of these thoughts while still retaining the focus in order to ideally balance the consistency of performance. The athlete agreed to the plan and the process was conducted as follows:

Session 1. Firstly, athlete and consultant went through greetings and a superficial review of athlete's current season in Liiga. Then the issues around inconsistency and maladaptive cognitive appraisals affecting the performance during the season were redefined. In addition, functional and dysfunctional performance were explicated in order to delineate the base level of performance. Furthermore, possible intervening techniques of these issues with mental coaching were discussed and MAC approach was introduced. Thus, the use of MAC with cue words modification could break the downward spiral of dysfunctional performance and maladaptive self-focused attention. Also, the concept of ideally resulting automated self-regulation was explained for the athlete in relation to the decreasing psychological work in future.

Session 2. Before the second session, the consultant met with the athlete's coach to gather observational information from second perspective to substantiate defined problematic factors. The aim of second session was to explain the idea of MAC for the athlete in depth, and ensure the process would not become overwhelming. Though, in the beginning of the session, feedback and thoughts from the first session were discussed. The new issue of uncertainty was

augmented: the athlete's team had acquired a new goaltender and the competition of ice time had increased. Hence, this increased the need for consistent performance. Nextly, due the athlete's' request, PowerPoint was used to explain the idea of MAC and the main characters of mental coaching. Mindfulness, acceptance and commitment were explained briefly and pre-requisitions for MAC (goal setting, mental training, emotion control and self-talk) were appraised. Also the concept of cue words was introduced in the second session. The athlete was asked to start develop some positive, specific words drawn from his strengths, that could help him focus. Three specific cue words were designed in cooperation with the athlete: ¨Calm diamond¨ for balancing inconsistent, insecure situations, ¨Balance¨ for excluding external maladaptive noise, and ¨Challenge¨ to overcome overwhelming negative thoughts of burdensome situations. The step by step plan how to use emotion control and cue words in practise situations was contemplated.

Session 3. The third session started with feedback review of the cue word and emotion recognition use. Accordingly, the ¨Calm diamond¨ was too long and complicated to use in game-like practice situation and it was shortened to ¨Diamond¨. Furthermore, the athlete was starting to develop a capacity to recognise different emotions in performance situations and even use the cue words in a minor level to balance these emotions. For example, athlete explained that he used the word ¨Challenge¨ at the start of one game after he was ordered to play even he was not prepared due to the plan of the other goaltender playing. However, the athlete noted that he had some difficulties completely grasping the idea of MAC. Therefore, the idea of MAC was re-explained and the plan of dividing the mindfulness, acceptance and commitment into three separate in-depth sessions was emphasised. Following this, mindfulness and aimed increase of self-awareness was appraised through simple exemplificative exercises. The athlete was asked to describe his sensory input using all of his senses in current context and trying to do this also next time when practising on ice. In addition, the athlete was asked to take a note on all feelings in ice hockey related situations and

think what could be possible factors leading to these feelings in order to be able to use emotional control as an adaptive behaviour towards the optimal performance.

Session 4. Session four started with the athlete telling surprising news about him getting traded into another team in the middle of the season. Emotions related to the change were discussed, and the athlete was contented to explain how, with his increased self-awareness due mindfulness, he was able to process the change without confusion and see it as an opportunity. The athlete also reported that the need for consistent performance was increased and the designed cue word ¨Challenge¨ had become topical in the altered sporting situation. Because of the slight confusion, the PowerPoint presentation of the intervention was used to remind the athlete about the aims of the process. With the main topic of the session; acceptance, the idea of naturally occurring negative feelings was revisited in depth and the aimed free flow of these feelings was appraised with examples of athlete's reported game-situation emotions. Furthermore, some occurred negative emotions were brought up and the acceptance process was practised as an alternative to the suppressive control. Also the concept of arousal control related to acceptance phase of MAC was emphasised, conducive to be in certain level when aiming to automated execution of optimal performance.

Session 5. The fifth session began with discussion about adaptation to the changes of athlete's new training and game environment. The athlete reported that he was able to turn the situation of team change into adaptive, positive challenge with mindfully processing and mentally accepting the emotion of anxiousness. Although, the question about arousal control in relation to focus was brought up. Athlete had noticed that with these new techniques he was able to control arousal levels, but was unsure what level would be ideal for focus when aiming to optimal performance. At this phase, the Follow up tool's scale descriptions were reminded, as they are related to this specific issue. Furthermore, he explained having difficulties understanding the MAC-process without visual demonstration. The athlete also reported that the avoidance behaviour of

negative emotions related to maladaptive performing was not prevalent anymore. In reflection to concerns about arousal control, the concept of individual differences in mental activity levels of optimal performance were explored: athlete needs to find an ideal arousal level for optimal performing by oneself while consultant is providing tools for controlling it. Furthermore, committing to the factors, values or in this case, cue words, could help him to guide the focus and control arousal levels to adaptive, beneficial direction. In addition, athlete's important values and characteristics of behaviour, necessary committing to refocus phase and avoiding maladaptive self-focused attention were reassessed from the Session 1. With the help of created cue words, it was aimed that the athlete would be able to easier and faster adapt to the committing phase of MAC-approach and that way create the opportunity for automated execution more frequently.

Session 6. Between the fifth and sixth session athlete was provided with a visual representation formula of ¨The Loop¨ (see Appendix A) displaying the MAC process combined with cue words, which was designed by the consultant to help athlete concretise the ideology. Session six started with Washing the dish –in-session mindfulness exercise (Gardner & Moore, 2007) leading into a discussion about acquired mental strategies to control consistency and cognitive appraisals. Furthermore, mindfulness exercise application to pre-exercise dynamic stretching was also provided and encouraged to try out during team practice sessions. Several gains in emotion recognition and arousal control were reported by the athlete. In addition, the visual representation formula of MAC process related to Ice Hockey had created a deeper understanding of the ideology. However, understanding the process had generated a new question about the connection between MAC program and the flow state. After a debate-like discussion, athlete and consultant agreed on MAC program working as a mental tool for creating an opportunity for the state of automated execution. Following this, several real life examples of athlete's maladaptive cognitive appraisals (Emotion and interference form by Gardner and Moore, 2007) during game and training situations were addressed using the MAC formula. Reportedly, this was the most beneficial

mode to understand arousal control when aiming to achieve optimal performance. In relation to consistency and cognitive appraisals, the concept of poise was revisited as a reminder to the idea that human behaviour can be separated from emotions.

Session 7. The seventh session started with reviewing the whole MAC program and discussing athlete's subjective gains for mental proficiency. The athlete suggested that the program has given remarkable amount of insight to the mental aspect of professional sport, and requested a further cooperation relative to the concept, following this intervention. Reportedly, the athlete favoured the idea of creating opportunity for automated execution of performance tasks via processing emotions instead of ignoring them. This way he was able to acquire consistency in his game and negative cognitive appraisals had a lesser effect on his performance. For instance, using The Loop and cue words in maladaptive performance situations assisted him to refocus more rapidly and adaptively. In addition, pre-exercise mindfulness dynamic stretching was an effective reminder of the technique and emotion recognition in performance situations. To finalise the seventh session and MAC program, examples of maladaptive cognitive appraisal and over-arousal were addressed using The Loop. And most importantly, future plan of using MAC and cue words in action was elaborated.

Results

All the gathered subjective self-evaluative data and saving percentages were inserted to Excel matrix to investigate the effects of intervention with the functions of mean, standard deviation and effect size. Saving percentage was increased from pre-intervention (M = 92.02%, SD = 4.35%) to post-intervention (M = 93.12% SD = 4.35%), with a small effect size (*Cohen's d* = .25). Self-evaluative Follow up tool mean values are displayed in Table 1.

Table 1

Descriptive statistics of self-evaluative Follow up tool in Pre-intervention and Post-intervention conditions

	Pre-intervention	Post-intervention	Effect size (Post-Pre)
Self-evaluation Items	Mean (SD)	Mean (SD)	Cohen's d
1. Stress	3.00 (1.04)	2.75 (0.68)	.28
2. Self-confidence	4.93 (0.62)	4.94 (0.68)	.02
3. Arousal (before the game)	4.71 (1.20)	4.88 (0.72)	.17
4. Arousal (during the game)	4.86 (0.77)	5.19 (0.66)	.46
5. Focus resilience	5.07 (0.83)	4.81 (0.83)	.15
6. Overall anxiety	5.43 (0.85)	5.00 (0.63)	.57

Note. Pre-intervention values show the mean of 14 games and Post-intervention of 16 games.

As shown in *Table 1*, stress level and overall anxiety were reduced from pre-intervention to post-intervention with small and medium effect sizes respectively. Also focus resilience was decreased. Mean self-confidence values remained fairly stable over the measured period. In comparison, the feeling or arousal levels (before and during the game) were increased from pre-intervention to post-intervention, during the game measure resulting a medium effect size. Notably, a reductive trend of standard deviation of the mean values can be observed, except in self-confidence where the standard deviation increased slightly.

Discussion

Considering the study aims of increasing psychological flexibility, gaining adaptive coping strategies for challenges and augmenting performance consistency, with reduction in maladaptive cognitive appraisals, the results display a positive adjustment of intervention effectiveness. When measured by the Follow up tool, it can be stated that with the MAC and cue words intervention, the athlete was able to control and reduce stress levels and anxiety in performance situations. His self-confidence remained the same in pre- and post-intervention measures, and arousal levels (before and during the game) were slightly increased. Thus, as arousal levels were measured with positively increasing scale (score 7 indicating the optimal mental state), and the increase in these scores can be seen demonstrating better adjustment to the game situation. Although, it should be noted that the focus resilience decreased from pre-intervention condition to post-intervention condition, displaying undesirable change. However, the decline was marginal in this variable and the mean level still stayed approximately the same, demonstrating moderately strong mind control during the game. Importantly though, performance was superior in post-intervention compared to pre-intervention, when measured by the saving percentage. In addition, subjective mental aspects of the performance were more consistent due the lessen standard deviation in subjective data. Hence, the trend of decreased standard deviation in subjective data of mental states demonstrates the explicit MAC-ideology of being able to process and flexibly control all affective experiences in furtherance to aiming optimal performance (Gardner & Moore, 2007).

Furthermore, another main concept of MAC approach, reducing the uncertainty related anxiousness (Gardner & Moore, 2007), was effectively demonstrated by the results of decreased stress level and overall anxiety, accompanied with less variability in respective game-by-game measures. Especially, the ideally ascertained acceptance of maladaptive negative emotional states as a naturally occurring phenomena, can be seen displaying the change in uncertainty related anxiousness and relative stress levels. In addition, this was displayed by the athlete's feedback of

increased non-judgemental mindfulness and acceptance in order to improve concentration and effective performance attention. Moreover, cue words can be seen as an assistive factor to less fluctuating anxiousness and reduced stress level due the emphasised focus on associative, external agents (Perkos, Theodorakis & Chroni, 2002) instead of uncertainty increasing internal factors and noise (Mallet & Hanrahan, 1997; Gardner & Moore, 2007). In addition, observed results support the idea of decreased verbal cognitive activity when aiming to optimal focus and automated execution (Crews & Lewis, 1993; Czikzenmihalyi, 2014). Admittedly, decreased cognitive activity was not directly measured, but the feedback of the athlete's increased capacity for self-regulation reinforces Hatzigeorgiadis et al.'s (2011) idea of disintegrating negative downward spiral of maladaptive thoughts in order to create opportunity for automated execution.

Moreover, arousal states before and during the game were slightly increased, which indicates improved arousal control and commonly better feeling, when reflecting to athlete's desired intention of increased performance excitement. Most importantly, the arousal levels were more stable after the intervention, which supportively demonstrates the arousal control induced consistency (Garner & Moore, 2007), and slightly substantiates the performance enhancing mental toughness (Gucciardi & Gordon, 2011). Some adaptation difficulties for new arousal control method of MAC process can be seen in a decrease of post-intervention focus resilience. Adaptation to effective use of novel multifaceted coping methods of emotion control can be time-consuming and display detrimental effect at onset, but if correctly used, improve the control over the time (Jones, Lavallee & Thatcher, 2012, p.7). Thus, this trend was observed when looking at the sixteen post-intervention games separately. In first five games after intervention, mind control value was notably lower than the mean, but after that the focus resilience increased progressively. Despite the prolonged effect of adaptation to MAC processing, the intervention can be stated to be effective on arousal control, supported by lessen variability in stress and anxiety levels.

In addition, positive progress of performance was also observed, when measured by saving percentage. Increase in saving percentage indicates enhanced goaltending performance. In relation to the aimed consistency, there were some indications to the direction of more stable performance. Even though the sporadic variability (standard deviation) between pre- and post-intervention did not differ, athlete's subjective experience about being able to perform more consistently after intervention was noted latter in feedback session. Furthermore, the athlete emphasised learned ability to separate emotions and actions in order to controllably process arousal states to create opportunity for automated execution. This comment effectively summarises the ideology of MAC approach and cue words: Non-judgemental awareness combined with committal focused attention can be used to enhance psychilogical flexibility and adaptive, functional performance (Gardner & Moore, 2007; Mallett & Hanrahan, 1997).

Undoubtedly, the state of flow and automated execution can be argued, but as previously mentioned, that was an easily defined medium for desired ideal performance state. In addition, the ideal stress and anxiety levels when aiming to optimal performance can be argued to vary between individuals (Gucciardi & Gordon, 2011; Czikzenmihalyi, 2014), and therefore be difficult to measure. Nevertheless, after consulting the athlete in follow up session, he was extremely satisfied with the idea that he was able to determine the desired stress and anxiety levels for himself by using the data recorded, and most importantly, control these levels by acquired MAC and cue word skills.

Considerably, other limitations of the study are the specific context of ice hockey and measurement techniques. Firstly, ice hockey is a team sport and several self-sufficient factors affecting goaltender's mental proficiency can be considered (Vehviläinen, 2012). For example, if the team makes a defensive mistake and allows a goal, this can have a maladaptive effect on goaltender's mental state of performance. Furthermore, question of how often goaltender is actually able to create an opportunity for ideal automated execution –like state in such a rapidly alternating

game as ice hockey, can be raised. Additionally, the team change into a better one can be seen as an effective factor on performance, yet, it has no effect on individually measured saving percentage. Therefore, performance can still be seen enhanced. Nevertheless, the MAC approach should assist the athlete to cope with these negative cognitive appraisals and enhance the opportunity for ideal performance. In relation to the specific nature of ice hockey, the measurement techniques can be seen as a limitation and a strength of the study. Although, the reliability and validity of the Follow up tool were not assessed. Additionally, the scales can be seen controversial due the inconsistency in response format. Thus, all the variables were assessed by using polychotomous seven-point scale, but response format differentiated along the continuum. Notwithstanding the principles, that eventually and optimally these measures were used determine one's own ideal levels for optimal performance, the measurement tool could be improved by changing the wording in a way that all the questions would have similar continuum in response format (e.g. in all variables the score 7 would indicate optimal adaptation), ideally resulting more psychologically sound data. For instance, the measured arousal levels can be seen slightly controversial indicated by the athlete's confusion over arousal control and respective measurement scales during the intervention. However, when emphasising the ideology of MAC providing arousal control methods aiming to delineate optimal arousal levels for each individual and create an opportunity for optimal performance, it can be seen less effective limitation. Consequently, a future recommendation would be to conduct a similar study, using a larger sample and more psychometrically sound measurement tools.

Reflections

Self-reflection in applied practice case studies is recommended by Knowles, Gilbourne, Tomlinson and Anderson (2007), in order to beneficially promote value inherent philosophical orientation of the consultant. This can be seen especially important due my student status and self-learning approach to the case study. Moreover, concurrently conducting a sport psychology course at university and applying learned theory (MAC) in modified manner into

practice, can feel tedious intermittently, but I found it immensely rewarding in the end. Notably, the experience was surprisingly time-consuming, but extremely interesting. The effectiveness on performance with the slight modifications of athletes thinking and arousal control were eminently inspiring. It was satisfying to put consultant philosophies into action with an adaptive, open-minded athlete. The success of the intervention was facilitated by the performer's willingness to participate and improve in the mental aspects of professional sport. In addition, the feedback from the athlete influenced my thoughts and motivated me to work into greater extent when aiming to optimize athlete's performance. Furthermore, the goals of increasing performance consistency and adapting to negative cognitive appraisals were proportionally accomplished, which inspires to operate amongst similar approaches when aiming to enhanced performance. In a note, preparation and groundwork before conducting an intervention should be conducted more thoroughly and in depth, to be able to work with several athletes simultaneously in future. Relatively, an experienced mentor, providing contiguous guiding and cooperation could reduce some uncertainty and make the intervention even more effective. Also, more concretized working (going to the practice session on ice and working with the athlete's nonce issues) could improve the desired results. Overall, despite the several experienced difficulties throughout the project, the experience was rewarding, co-beneficial and effective, which has inspired me to follow the path of sport psychology education.

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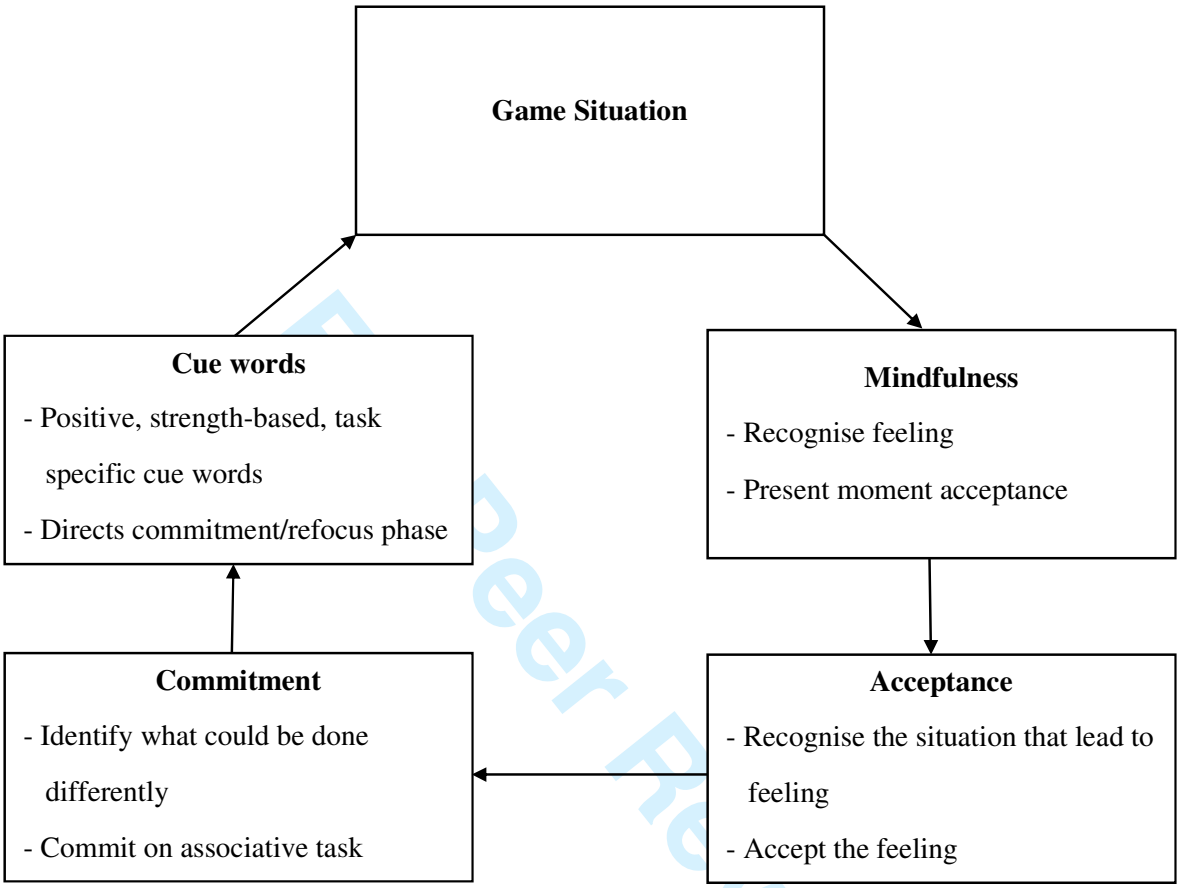
Appendix A

The Loop



Appendix B

Follow up tool (Modified from Vehviläinen, 2012)

Game:

Date:

Result:

Stress (1 = no stress - 7 = extreme stress):

1 2 3 4 5 6 7

Self-Confidence (1 = weak - 7 = strong):

1 2 3 4 5 6 7

Feeling before game (1 = weak - 7 = strong):

1 2 3 4 5 6 7

Feeling during the game (1 = weak - 7 = strong):

1 2 3 4 5 6 7

How mind stays under control during the game (1 = weak - 7 = strong):

1 2 3 4 5 6 7

Pressure/Anxiety level (1 = weak - 7 = strong):

1 2 3 4 5 6 7