

Case Study 4: A case study of cognitive behaviour therapy in tennis

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This case study describes the application of cognitive behaviour therapy to the sport psychology service to an individual tennis player (Melissa) in the final stages of the QSEP training process. The client was seeking assistance due to depreciation in performance over the past few months, post injury. The client's mother initially approached the consultant and she was very proactive in her development across the support program. The main aim of this support was to enhance performance and wellbeing in tennis whilst adhering to the protocols within cognitive behaviour therapy. The report offers an overview of the theoretical and philosophical decisions made, a variety interventions selected, and a reflection and evaluation of the support service.

Background

THIS CASE STUDY describes a portion of continuing work undertaken with an eleven-year old national level tennis player (herein known as Melissa). Over a six week period Melissa and I met for one hour per week at a coffee shop agreed prior to the sessions. I was approached by Melissa's mother through my website asking for help after Melissa had suffered a fractured radius with 'significant tissue damage' which had healed and been rehabilitated with the help of a physiotherapist prior to psychological support being sought. Initially a thirty-minute introductory session was conducted where some basic ideas around sport psychology (e.g. What is sport psychology? Why athletes engage in sport psychology? And what sport psychology can and cannot do?) were discussed and a general overview of the support service was given. Melissa had attended a high performance tennis academy since January 2015 and was competing and training on a regular basis around her academic studies. Melissa's mother and father attended the sessions and were seated within earshot. After some discussion between Melissa, her parents and I; her parents were also invited to listen to

a summary in the final ten minutes of each session. All BPS ethical requirements were adhered to and parental consent was gained prior to the start of the support.

Professional philosophy

Poczwardowski et al., (2004) stated that 'it is the professional philosophy of a consultant that drives the helping process and determines the points of both departure and arrival regarding the client's behaviour change and also guides consultants in virtually every aspect of their applied work' (p.446). I have come to understand the professional philosophy as the values and beliefs that I uphold. The values that I uphold are; accountability for my work, professionalism with regards to sport psychology delivery, compassion and commitment to my clients, honesty and openness with my clients, providing effective solutions, and return on investment for my clients. Based on Friedman & Kaslow's (1986) development of professional identity model, I would suggest that I am in the fifth identity and independence stage; I am in a stage of professional adolescence but am attracted to peer supervision, willing and able to express differences in opinion and

am in a position to accept or reject advice from a supervisor. I am also very aware of my areas of expertise and boundaries that I work within. Finally, I have recently completed the BPS psychometric test user qualification and have been qualified to use the NEO PI-R personality test.

Theoretical underpinning

This case is theoretically underpinned by the cognitive-behavioural approach. The cognitive-behavioural approach is fundamentally a collaborative project between the psychologist and the client (Westbrook et al., 2011). The psychologist and client each bring their own expertise to the project, the psychologist knowledge about effective ways to solve problems and the client brings expertise of her own situation. This approach is problem focussed and structured in nature and this structure is maintained throughout the sessions (e.g. by setting an agenda at the beginning). Westbrook et al. (2011) suggest that this approach should be time limited and brief thereby increasing the structure and can be anywhere between six and twenty sessions. Within this case an initial six sessions were offered and Melissa decided to continue with further sessions after completion. Implicit in the cognitive-behavioural approach is the interaction between the situation, cognitions, emotions and behaviours (Katz & Hemmings, 2009). There are a number of connections involved within this interaction. Whenever an emotion is felt there is a thought connected to it, this suggests that we attach meaning to the emotions (Greenberger & Padesky, 1995). Thoughts and behaviours can often be seen by clients to be disconnected however usually there is a close connection between thoughts and behaviours. Clients are often unaware of the connection. When a decision to change is made, thoughts can determine how this change occurs. Thoughts also affect physical reactions. Often athletes can be seen to use the link between thoughts and physiology to increase arousal during performance, however this effect can be detrimental as

normal bodily functions can be mistaken for negative reactions to the situation. The final connection within this approach is that between the environment or situation and thoughts. An environment can significantly impact upon thoughts, emotions, physiology, and behaviour (Greenberger & Padesky, 1995).

Needs analysis

Psychometric assessment

Two psychometric assessments were used at the beginning of this case in order to guide the intervention. These tests were administered with the help of Melissa's mother who was also trained in the use of psychometric tests. Firstly, a personality test based upon the Big Five personality traits was used to identify Melissa's personality traits using a norm group of over 10,000 people offered the test online. Notably within the personality test Melissa scored high on agreeableness suggesting that she would adjust her behaviour to suit others more readily than the population norm. She also scored low on neuroticism or emotional stability suggesting that her emotions are stable and low on conscientiousness suggesting she is likely to be less rigid in working towards goals and less exacting in applying moral principles. Finally Melissa scored slightly low on extraversion suggesting she may be reserved when working with a psychologist however could experience higher levels of independence. The second psychometric test used within this needs analysis was the State-Trait Anxiety Inventory in which Melissa scored 78 on form Y-1 suggesting a high state anxiety whilst scoring 47 on form Y-2 suggesting a lower level of trait anxiety. This was explored further in the assessment interview.

Interview

The needs analysis took place over the first ninety minutes of the support program. In February 2015 one month after joining a high performance tennis academy Melissa injured her right wrist. Upon X-ray she was diagnosed with a fractured radius, she had a cast fitted

and the bone had fully healed. She attended physiotherapy every two weeks and was given 'squeeze putty' to help add strength to the hand and wrist. She had physically rehabilitated well and had returned to training sessions however had not yet returned to competition. She would train around 22 hours per week which included technical training, simulated competitions, and fitness training. She had received no formal psychological training previously. When asked, Melissa's long term goal was to play professional tennis in international competition.

Melissa's perceived strengths were; (1) fast hands, meaning that she was effective at volleying, (2) ground strokes, (3) serves, more specifically her power in the serve and the placement of the serve is accurate and finally (4) 'working out' other players, meaning she is able to get comfortable and understand other player's technique quickly during a game. Her perceived weaknesses were; (1) getting around the court, and (2)

not being 'bouncy', or being very static when playing. When asked a miracle question (if she woke up tomorrow morning and everything was better, what would be different?) Melissa stated that she would be able to ask her coaches for help when she wanted it, not when they were able to give it, she would be 'really confident' so that when something was changed at the last minute she wouldn't get anxious and that she would be able to control her anxiety when put under pressure. She stated that she would often put pressure on herself to impress her parents, coaches and spectators, and would regularly say 'I should have won because I am taller, stronger, or have the upper hand'. She stated that this pressure would make her anxious and then cause performance to drop (See performance profile in Appendix 3 for more information).

Melissa stated on a number of occasions that she 'always gets anxious before I play', which would result in her often standing near

Table 1: Summary of cognitive-behavioural aspects Melissa's of sport experience

Situations	Competition, simulated competition
Physical reactions	Stiffness, tummy aches, tense muscles before the game, jelly legs, heavy arms
Moods	Irritable (7/10), worried (7/10), anxious (8/10), snappy (7/10), unfocused (8/10)
Behaviours	Standing closer to mum and dad, being slow, decreased focus
Thoughts	I should win, they are so small, I want to impress mum and dad, I hope my coach didn't see that, why does my serve never go in
Triggers	Repeated poor shots, making the same mistake over and over, underestimating opponents, thinking about the car journey home
Modifiers	Focusing on specific elements of performance, thinking about the car journey home, the importance of the game, mother checking the rankings of other players, mother and father's mood

her parents and she disliked being away from them during competitions. This would often be linked to thoughts such as 'keep calm', 'what if they beat us' or 'we may look silly if we lose, they are so small'. This would then be associated with tense muscles, stiffness and 'tummy' aches which would then dissipate during play. When asked if she remembered a time when this began Melissa stated that when she was eight years old and started playing with green balls she noticed that she began to get nervous during competition. She felt the need to impress others due to the amount of money her parents had spent, and the amount of time her coach has put into her performance. After some probing around what other people do that make her nervous or confident, it became apparent that Melissa's mother had a habit of checking and telling Melissa about her rankings in relation to other competitors. Melissa stated that this was not helpful and often made her anxious but she had not discussed this with her mother. Melissa would often state that she would say 'I should beat her because she is a lower ranking than me' to herself which would evoke negative emotions and physiology resulting in decreased performance. This can be seen within the personality profile with the high level of agreeableness and a possible need to adjust her behaviour to please others. Melissa mentioned her injury very little throughout the needs analysis however the effects of injury on confidence and anxiety were considered during the conceptualisation.

Aims of the support provision

Following the needs analysis with Melissa the following aims were put in place and agreed with her and her parents:

- To introduce goal setting for each performance focusing on strengths within performance to increase focus, confidence and reduce state anxiety.
- To develop Melissa's understanding of controllable performances addressing focus, confidence and the state anxiety score in the STAI.

- To develop balanced cognitions within performance to address the automatic negative thoughts that arise prior to and during performance addressing the state anxiety score in the STAI.

Intervention

Goal setting

Discussions around Melissa's strengths during session one had inspired her to set basic performance goals for her simulated competitions during that week. She had noticed personal and performance gains and was keen to learn more. Within the earlier stages of cognitive-behavioural work goal setting helps to structure the sessions but also confers that change is possible, it can be used to engender hope and reduce any helplessness that the client may have (Westbrook et al., 2011). During session two of the support, goal setting for performance was discussed and I introduced Melissa to different types of goals and where they may be useful. Burton et al. (2001) suggest that performance, process, and outcome goals play an important role in directing behaviour and facilitating change. The indirect thought-process view suggests that goals lead to change in psychological processes such as confidence and anxiety (see Burton, 1989) conversely the direct mechanist view suggests that goals also direct attention to performance elements and prolongs performer persistence (see Locke & Latham, 2002). Within this session the SMART goal setting acronym and the difference between performance and outcome goals was explained. Melissa was encouraged to set performance and outcome goals for her next competition around the strengths identified within the first session in order to decrease anxiety, increase confidence and direct attention towards these strengths (e.g., slow down on the serve, be more accurate, use controlled aggression during the match). She would record these goals in a diary on the day when the goal should be completed, this allowed for effective recording and monitoring of goal setting behaviour.

Control the controllable

Session three focused upon performance control, understanding the factors that are within a performers control is a fundamental element of sport psychology and of successful performance (Bull et al., 1996). I asked Melissa to identify the technical, tactical, physical and psychological elements of her performance that were under her control. Once these were defined and discussions around why each of the elements was controllable were completed, I asked Melissa to identify the elements of performance that were outside of her control (see Table 2 for examples).

Developing alternative and balanced thinking

During session four I introduced Melissa to thought recording using a thought record sheet (Appendix 4) similar to that suggested by Greenberger and Padesky (1995). Westbrook et al. (2011) suggest that thought record is most accurate closer to the event that caused a negative thought, in this exercise Melissa retrospectively identified negative thoughts that had arisen during training and competition. This exercise introduces the basic skills in cognitive behaviour therapy (Westbrook et al., 2001) and asks the client to tune into relevant thoughts and then evaluate them. It also trains the client

to recognise these idiosyncratic cognitions (Beck, 1963). During this session many of the thoughts expressed during the needs analysis arose but more time was devoted to unpacking the thoughts, identifying where they had come from and why they were important. Each thought was rated on their perceived impact to performance. Melissa was set homework to continue recording her thoughts on the thought record sheet as discussed in the session, she was prompted to record at various points during the week (e.g. when struggling at training, when she felt anxious about a performance or at a competition where performance had deteriorated due to mistakes).

During session five and six Melissa and I reviewed her thought record sheets from the weeks training and competitions. I noticed that Melissa’s thoughts often took the form of questions seen in Table 3. Each of these thoughts was then questioned (how would you answer it?) to understand the underlying cause of the thought. This then allowed for us to discuss reframing the underlying negative statement. Reframing allowed Melissa to develop a wider perspective on the issue and turned her negative and often impractical question into a positive and useful statement. Melissa’s homework from this session was to identify further negative thoughts and

Table 2: Examples of controllable and uncontrollable elements of Melissa’s tennis performance

Controllable	Uncontrollable
Having the right equipment (e.g. shoes, shorts, racquet, balls)	The conditions of the court, whether playing inside or outside etc.
Being prepared for a game	The opponents/ doubles team mate
Nervousness	Spectators
Physical, tactical and technical performance	Winning or losing

spend time practising the reframing technique on her own. I asked her mother to e-mail me copies of her reframed thoughts to monitor and correct anything that arose during the week.

Reflections

This section is intended to give a brief account of my thoughts on various aspects of the process and will cover the psychometric test use and the interventions used. Melissa rarely mentioned her injury and how it related to her current psychological approach to tennis. Melissa seemed not to be too concerned about its effect, however I recognise that it had the potential to cause disruption to underlying core beliefs about physical ability, strength, confidence and one’s own mortality, this is something that could be addressed in the future.

I am unaware of any psychometric tests in sport devised specifically for children, therefore using a good adult test is the best way in which I could have gained these insights. The Big Five personality test was chosen for cost effectiveness however if cost was not an issue then I would have chosen the NEO

PI-R due to its larger norm groups, and higher reliability and validity. I chose the STAI for its simplicity, alternatives such as the CSAI-2 could have been used however I did not have access to the scoring and norm groups for this test. If Melissa’s mother did not have the experience in psychometric assessment and could not assist Melissa when answering the test, I would have supervised the tests myself.

I have used all of the interventions previously and therefore was comfortable with the process of implementing them. I was able to monitor Melissa’s use of goal setting behaviour using her goal diary. She would regularly set goals for competitions and her coaches would set goals for her during training. I would have been keen to know whether her coaches set any competition goals for her each week, this is perhaps something that I will go on to do when the relationship between Melissa and I is stronger. Throughout my training I have felt uncomfortable with the ‘problem based’ approach to sport psychology. Often athletes will forget about what their strengths are during training and focus on development

Table 3: Examples of Melissa’s reframed thoughts

Negative thought	Underlying cause	Alternative thought
Why can't I get any back hand shots in?	My coach has told me my core is misaligned	If I turn my core and keep at it I will be more successful
My serves are so bad today?	I'm rushing	Slow it down, keep it accurate
Is the only shot I can play today a balloon ball?	I'm just letting the ball hit the racquet but not doing anything with it	Hit through the ball
What is mum and dad thinking about my game?	I care what mum and dad think and don't want to disappoint them	Focus on the match, we can talk after

points from coaches throughout games. This can often be a detriment to performance and is the reason I chose to initially focus on the strengths based goal setting. I felt that an emphasis was placed upon how Melissa's parents viewed her performance with this being possibly one of the causes of anxiety.

Evaluation

Evaluation allows us to understand the effectiveness of the support given, putting psychologists in the scientist-practitioner tradition, it allows us to identify the kinds of outcomes future clients and practitioners can expect when using similar types of intervention and gives a base line of data against which we can compare changes in client's behaviour (Westbrook et al., 2011). The support provision in this case was evaluated in three ways; by repeating the psychometric and performance profiling done during the needs analysis, by analysing behavioural outcomes with feedback from Melissa's parents and then gaining feedback from both Melissa and her parents on their perceptions of the support given.

Psychometric tests and performance profiling

At the end of the prescribed six hours of support I retested the Big Five personality test and the STAI psychometric test and repeated the performance profiling session with the same headings. It is widely agreed that personality is stable over time but more malleable during childhood and adolescence (Costa & Mcree, 1992). I would not expect to see any changes within personality over a short period of time and the retested personality test showed no changes. Melissa's STAI profile showed little change within the trait anxiety levels scoring 45 on form Y-2 however on form Y-1 she scored 65 showing an improvement in state anxiety levels. This could be attributed to the more effective thought patterns and coping mechanisms within anxiety inducing situations.

The post-intervention performance profile (Appendix 5) shows that Melissa feels she has more motivation to succeed,

more focus on court and has more general confidence. When this was discussed further with Melissa she suggested that she felt more able to ask for help from her parents, her coaches and I when she needs it and is able to explain herself better when asked what it is she needs. Melissa's performance profile also states that she feels slightly more prepared when going into a competition and suggested that this is because she has a clearer idea of what skills she has to perform well at to be more successful. She stated that she enjoyed the strength based goal setting procedure for each competition as it gave her a clear strategy when playing.

Behavioural outcomes

Melissa's parents and I identified observable behavioural outcomes during the support provision. Melissa's parents and I noticed that her ability to converse with adults had grown dramatically; she was more confident in her everyday life and was able to demand more from her coaches when she needed advice or coaching. It was felt that this enabled her to feel more confident in her technique over time. I feel that this is a by-product of working with me as I often asked her to describe her thoughts, feelings and behaviours in detail, increasing her ability to understand, identify and articulate her current and ideal cognitive and behavioural states. Melissa's parents stated that she was clearly more thoughtful with her tennis and had clear goals in mind when going into a match helping her stay focused on her strengths rather than focusing on her weaknesses. However, it was noted that Melissa still had trouble with negative thoughts and was still getting used to reframing them. She would often practice after training, noting down her negative thoughts and attempting to reframe them but was currently unable to take this technique into a game.

Client feedback

Using a client feedback form (see Appendix 6 for an example) Melissa and her mother rated the consultancy a mean score of 4.3/5.

Melissa stated that the greatest benefit she gained from the work was the ability to think more clearly about her mental approach whilst being able to communicate more confidently with her coaches. She stated that she felt more able to control her thoughts and feelings during a game, whilst focusing on my relevant thoughts as opposed to more negative, unproductive thoughts. She suggested that I use more worksheets and have some games that could help to make the consultancy more fun and interactive. Melissa's mother stated that the greatest benefit she saw in Melissa was her new ability to talk about herself and her 'confidence' in doing so.

Conclusion

To conclude, using a cognitive-behavioural

approach to help Melissa return to competition following rehabilitation for a fractured radius had some success. Melissa's active approach to using psychological techniques allowed for her to develop. Monitoring Melissa's progress over time through the use of goal diaries and thought record sheets allowed me to give her feedback on her progress and to troubleshoot as any problems arose. Going forward the agreed goal was to increase ability with reframing negative thoughts and to introduce behavioural techniques in order to better manage negative thoughts, increase confidence and increase emotional control. Finally, I would look to modify Melissa's underlying assumptions and core beliefs related to her autonomy, anxiety and confidence.

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