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Cognitive Behavior Drama: An Innovative Intervention Model that Combines Established Psychological Methods with the Art Form of Drama to Provide Young Children on the Autism Spectrum with the Motivation and Confidence to Overcome Their Fears

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Authors' contributions

All authors read and approved the final manuscript.

Case Study

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ABSTRACT

Aims: To describe and evaluate the application of an innovative approach that combines cognitive and behavioral techniques with the art-form of drama to treating childhood fears, leading the participant to an in vivo exposure to the fear stimulus.

Presentation of Case: An 11 year old boy diagnosed with Asperger syndrome, who had a long standing fear of being touched and for whom all other forms of therapy, including behavioral therapy and traditional CBT interventions had been found to be ineffective, participated in the study.

Discussion: The results obtained in terms of the clinical outcome of this single case study are very encouraging and indicate that the Cognitive Behavior Drama Model may indeed be an effective form of therapy for certain types of complex cases, for which more traditional approaches have been unsuccessful. Follow up studies that would replicate and develop the findings of this study should be conducted to establish the efficacy of the CBD model as evidence based practice

Conclusion: Importantly, the validity of the model primarily lies in its potential to reach younger children who may not benefit from traditional CBT due to cognitive immaturity.

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Furthermore, the inherently enjoyable and unobtrusive nature of the dramatic plot immediately engages children in the therapeutic process providing them with the motivation to overcome their fears.

Keywords: Phobias; intervention; childhood fears; motivation; autism; drama intervention.

1. INTRODUCTION

Childhood fears that persist over time and interfere with children's normal functioning may have detrimental effects on their social and emotional development [1]. It has been well documented in the literature that children with autism and related disorders suffer from intense fears more than their typically developing peers [2]. Yet, research on the treatment of fears in this population is scarce. Cognitive Behavior Therapy (CBT) is considered highly effective in treating fears and anxieties [3]. However, given that many childhood fears are based on fantasy, the applicability of CBT may be hindered by cognitive immaturity, as some thought processes regarded as cognitive distortions in adults, are developmentally appropriate for children [4]. Furthermore, lack of motivation to engage in therapy is another commonly encountered obstacle when treating childhood fears [5].

Cognitive Behavior Drama (CBD) is a new intervention model specifically designed to address these considerations. It is tailored to meet the developmental needs of children who find it hard to engage in traditional CBT, providing them with the motivation to engage in the therapeutic process. The CBD model was developed through a merging of the Drama in Education (DIE) approach as delineated in the writing of Dorothy Heathcote, Gavin Bolton, Cecily O'Neil, and Jonathan Neelands [6,7,8,9,10,11] and principles from Cognitive and Behavior Therapies [12,13,14,15,16,17,18]. CBD borrows its structure from the DIE model in terms of creating a developmentally appropriate fictional context that provides phobic children with the motivation to engage in the therapeutic process, while employing techniques drawn from cognitive and behavior therapies to alleviate phobic symptoms.

The CBD method was originally designed to address the needs of children on the higher end of the autism spectrum, previously described as having Asperger Syndrome, yet no difficulty is envisaged when applied in typically developing children. Applied to phobias the CBD method involves using the phobic children's own creativity to involve them in the therapeutic process. The children are invited to engage in exciting fictional scenarios tailored around their strengths and special interests, and led through a series of belief building tasks to invest in the fictional context. Once their commitment in the drama is established, a problem that they will feel motivated to solve is introduced. To resolve it, the children have to overcome a number of obstacles culminating in an in vivo confrontation with the fear stimulus.

Importantly, the objective of therapy is not disclosed to the participants, as the success of the intervention primarily relies on distancing them from their everyday roles and realities and moving them to the safety of the fictional context where they are free to adopt new roles and attitudes (i.e. that of the hero who succeeds in every challenge) overcoming limitations rooted in past negative experiences. The intention is to provide them with positive experiences that not only challenge their perceptions of the fear stimuli and expectations attached to them, but also perceptions of their own abilities to resolve problems. The intention is to disconnect the fear stimulus from maladaptive responses by offering

opportunities to perform and receive reinforcement for functional behaviors within the fictional context.

Acknowledging that perceived self-efficacy plays an important role in successful coping behavior [19] the challenges preceding the confrontation with the fear stimuli are designed to build the children's self confidence in their abilities to overcome obstacles and exert control over their environment, as well as to establish patterns of success to be repeated in future occasions. To this end, the challenges are organized along the principle of Behavior Momentum [20, 21]. High probability requests based on the children's abilities and interests precede low probability requests, such as exposure to the anxiety provoking stimuli, so that the response momentum from the former carries over, increasing compliance in the latter.

Moreover, in line with the systematic desensitization paradigm the success experienced after these challenges serves to induce a positive emotional state incompatible with the emotion of fear, to antagonize the anxiety [22]. The fear stimulus is then presented symbolically as one more obstacle that the children will have to overcome to get to their objective. A unique feature of this approach is that the confrontation with the fear stimulus is just a means to an end for the child and not an end in itself. Once the phobic child is confronted with the fear stimulus within the drama, opportunities for repeated exposures in different settings and for prolonged periods of time are organized.

Preliminary descriptive evidence of the efficacy of the CBD model in treating phobias in children with Asperger syndrome were presented in a study conducted by the authors [23] outlining how an 11 year-old boy with Asperger syndrome overcame his long standing fear of hand-driers following a brief CBD program. The purpose of this paper is to address another fear avoidant behavior in the same participant to provide additional evidence for the intervention being used, and a greater understanding of the method. To achieve the latter the treatment process will be described in detail, highlighting the choice points during sessions, the rationale behind them and the child's responses.

2. PRESENTATION OF CASE

2.1 Participant

The participant, Kieran (not the participant's real name), was an 11 year-old boy diagnosed with Asperger Syndrome by a multidisciplinary team of experts on autism spectrum disorders, and was described as functioning in the normal range of intelligence. His parents were both 47 years old at the time of the intervention and worked in administrative posts in large service organisations. They were both actively involved in his education and care and jointly attended all meetings with his school and clinic. Kieran had a brother three years younger, with whom he did not share common interests as his brother related more with his own peers.

Kieran had previously received CBD intervention to overcome his long standing fear of hand-driers that led to the complete elimination of all fear related symptoms in the course of five sixty minute weekly sessions as describe by Karnezi and Tierney [23]. Kieran enjoyed the CBD classes and had developed a great understanding of the make belief process. He was well able to engage in role playing as well as contribute to the plot of the fictional scenarios. He had advanced written and verbal skills, and was very good at drawing comics.

The presenting problem for this intervention was Kieran's oversensitivity to being tapped. His parents reported his inability to control his temper when tapped, shouting and on occasions resorting to physical assault at the perceived offender. This difficulty prevented him from engaging in activities he enjoyed, such as playing in the school yard, and negatively affected how he was viewed by his peers.

2.2 Procedure

2.2.1 Baseline

During the baseline assessment, the facilitator tapped Kieran on two occasions. On the first, to draw his attention to a poster on the wall, and on the second in the context of pretend play - where two lions playfully interacted with each other rolling on the floor and tapping each other for fun. While Kieran immediately responded with a tantrum on the first occasion - crying, yelling and hitting himself - on the second occasion, not only did he not protest about being tapped but he even admitted to the facilitator that he enjoyed playing with the lion. It was not until the facilitator rephrased the question and asked him if he had enjoyed being tapped by the lion that his mood changed and he started crying and shouting that he hated the game with the lion, he was finished playing with lions and wanted to quit the drama forever. On another two instances when the facilitator tried to discuss with Kieran his aversion to tapping, the mere mention of the word *tap*, led him into a tantrum. Kieran claimed that tapping was bullying, that he hated it and wanted people to be nice to him. He said he would never tap another person and wouldn't permit anyone tapping him either.

2.2.2 Measures

The intervention was evaluated by in session observation of Kieran's behavior and parental reports. For the former, behaviors observed included Kieran's reaction to discussions about tapping; to the prospect of being tapped; and to actually being tapped. Kieran's behavior was very unambiguous. If he felt discomfort he conveyed it clearly by telling, yelling and becoming visibly upset. For the latter, the parents were asked to identify specific examples in the weeks prior the commencement of the intervention where Kieran had been tapped and his reaction to it, as well as during and after the intervention.

2.3 Intervention

All sessions took place in various locations (in-doors and out-doors) within the University, where the research was carried out. The CBD program was facilitated by the first author, who has a Master's degree in Drama in Education, four years of experience working with children with Autism Spectrum Disorders (ASD) and was receiving weekly supervision for two hours by the second author. The focus of the supervision was to ensure that the intervention was in keeping with the principles of Applied Behavioral Analysis and Cognitive Behavioral Therapy. The intervention consisted of seven, sixty minute, weekly sessions, and formed part of a larger program that aimed to address Kieran's difficulty relating with his peers. Kieran had already attended CBD classes for 3 months prior to this intervention.

The intervention was organised so that Kieran would be gradually exposed to the anxiety provoking stimulus. Given that Kieran's fear of being tapped was found to be based on the meaning he had attached to the word, rather than on a sensory oversensitivity, cognitive restructuring principles played a key role in planning the sessions.

2.3.1 Session 1: Sophia's Rescue (part 1)

Taking into consideration Kieran's statement that tapping was bullying and that he would never tap anyone or allow anyone else to tap him, the objective of the first session was to offer him the opportunity to expand his understanding of tapping through dramatic metaphor. The intention was to provide Kieran with positive experiences of tapping that would allow him to attach a new positive meaning to the word, replacing past negative associations. Creating a fictional context that would provide Kieran with a rational justification for the usefulness of tapping and the motivation to perform it, was the first step. Once comfortable tapping other people, the next step would be to allow others to tap him.

The session was introduced with a letter from *the dragon*, detailing Kieran's new assignment: "the rescue of a baby girl". Kieran loved detective stories and had solved many similar cases in the past. He was very proud of his achievements and was now looking forward to tackling this one.

2.3.1.1 Assignment's details

A baby called Sophia had gone missing. Kieran had to undertake a training course on how to look after a baby, before going on a mission to find her. The training included practising skills such as, holding a baby, feeding it, *tapping* it to burp and putting it to sleep. As the purpose of the training was to help Kieran view the act of tapping from a different perspective, the importance of tapping the baby after meals to burp, as a means of preventing her from choking, was emphasised.

As anticipated, Kieran was immediately drawn to the story and showed no negative reaction on hearing the word *tap* repeatedly during 'training', nor when he had to tap Sophia on numerous occasions to prevent her from choking. Yet, it is interesting here to note that Kieran had written *pat* the baby in his notes, although the word *tap* was intentionally exclusively used.

At the end of the session Kieran wrote:

'Johnny (this was the name that Kieran had picked for himself for the new story)

I liked the story today. A three month old baby girl has gone missing at the circus and Johnny Byways, a young boy and father in training, with a teenage girlfriend, had to convince the circus that he was training to be an acrobat so he could get into the Circus and free baby Sophia. He nurtured Sophia and tried to save her before she choked. Then, he brought the baby to her home and the mother was delighted. Let's hear it for old Johnny'.

2.3.2 Session 2: Sophia's Rescue (part 2)

Bearing in mind that in the previous session Kieran had replaced the word *tap* with *pat*, an indication that he was still uneasy with the sound of the word *tap*, further exposure to experiences that would help him attach a positive meaning to the word *tap*, as well as offering opportunities for generalisation were organised. The same story (Sophia's disappearance) was used as the *pretext*, to re-engage Kieran in the therapeutic process. The term *pretext* is here used as per O'Neill's [24] definition, to describe the occasion which initiates dramatic action.

Sophia had gone missing again, and Kieran had to get clues from a number of characters in the story in order to find her. One of them was the lazy frog (a puppet manipulated by the facilitator) who kept falling asleep while Kieran was trying to question him about the baby's whereabouts. Kieran had to find a way to keep the frog awake in order to get the information he wanted. To do so, he started tapping the frog to wake him up. Every time Kieran tapped the frog, the frog would wake up with a funny move and give him one piece of information. To get the full story, Kieran had to tap the frog repeatedly, which he did with great pleasure. As Kieran was becoming more relaxed tapping others (first the baby and now the frog), the next objective was to allow himself to be tapped.

The sleepy frog told Kieran that an evil witch called Edwina was responsible for the baby's disappearance. To defeat the witch Kieran had to sneak into her secret gardens and steal poisonous apples that held all her powers. To avoid being caught with the apples, Kieran had to swallow them, as soon as he saw the guard, and throw up when he was at a safe place, to avoid being poisoned. The frog offered to help Kieran to throw up by tapping him on the back. Kieran refused. He got very upset and said there was no way he could allow this to happen. To ease Kieran's anxiety, the facilitator offered him the opportunity to manipulate the puppet himself. This meant that Kieran would eat the apples and the frog that he would now be in control of, would tap him. Kieran refused again, and started shouting and saying *I don't like anybody to tap me.*

This is a transcript of the conversation that ensued:

- Kieran: *Haris you know how I hate being tapped in real life. I can't do it. I hate it. I am allergic to being tapped. Hit me, bite me, torture me if you want but don't tap me.* (He started shouting, then paused for a moment to think it over and tapped himself gently to see if he could take it. But, he soon changed his mind and started shouting again: *'No! I hate it! I hate it!'*).
- Facilitator: *Can you think of anybody that would not mind being tapped.*
- Kieran: *There is only one person Malfi.*
- Facilitator: *Can you play that person?*
- Kieran: (after a short pause) *I couldn't play a person that wouldn't mind being tapped, because me, Kieran, in real life I don't like it.*
- Facilitator: *Yes, but can you do it in your drama? Pretend you are that person?* (Kieran gave it a thought for a second).
- Kieran: *No!* (He was now crying and shouting again.) *I hate it! I hate it!*

Kieran was adamant that he wouldn't let anyone tap him, including himself. Yet, still motivated to go on with the mission, he came up with an ingenious solution: Instead of eating the apples himself and then asking the puppet to tap him to throw up, as had been suggested by the facilitator, he fed the apples to the puppet and then tapped the puppet to throw up. Kieran had managed to avoid the fear stimulus without resorting to a tantrum, whilst still working within the rules of the drama.

At the end of the drama Kieran wrote:

*"Dear Dragon,
I am helping Johnny on his mission. Edwina is planning to cook Sophia! Fortunately, I am going to rescue her. If that witch beats us, I'll be depressed. But Johnny and I are coming when they need us! We're OK, so don't panic!
Write to you next week.*

Pete”

Although Kieran's letter indicated his motivation and determination to solve the case, his overall participation in the session revealed that he was not ready to tackle his fear. It was felt that if pushed any further not only his relationship of trust with the facilitator could be jeopardised, but also his perception of drama as a safe place where he was having fun. Therefore, a decision was taken to give the tapping issue a rest before attempting another confrontation.

2.3.3 Session 3: Sophia's Rescue (part 3)

The main objective of this session was to ensure that Kieran felt safe and relaxed within the drama. To this end the word tapping was never mentioned and the activities that led to the resolution of the fictional problem - Sophia's rescue - did not require any contact with the anxiety provoking stimulus. In keeping with the principle of behaviour momentum [21], a sequence of high probability, highly enjoyable requests were made, prior to the representation of the requirement to perform the low probability behaviour of tapping himself. The activities were designed to capitalise on Kieran's strengths and special interests, taking the focus away from what Kieran couldn't do, to what he could. The idea was to create a pattern of success that would build Kieran's confidence in his ability to overcome obstacles and change his perception of self-efficacy [19] before another confrontation with the fear stimulus was introduced.

At the end of the session, Kieran wrote in his diary: *“Dear Dragon, Johnny and Peter went on another mission today. We were rescuing Sophia like real heroes...”* He then took a big piece of paper and wrote another note to the Dragon, but this time on behalf of Edwina. *“Dear Dragon: Phil the Ostrich is currently on a mission arrested in a hard cage! Try to free him! I doubt you'll succeed!! Love ? EDWINA Aha ha ha ha”*.

Kieran's second note gave the cue for his next mission. It is important here to mention that these notes were unprompted by the facilitator, and yet provided a valuable insight into Kieran's engagement in the process and his ability to cope with an exposure to the fear stimulus at any given moment. Furthermore, his own ideas about the development of the fictional scenario were often used to enhance his investment in the process.

2.3.4 Session 4: Free Phil the Ostrich

As evidenced in his notes to the dragon, Kieran was not only happy and proud of himself for having succeeded in the mission, but was also in control of the dramatic action - taking the initiative in choosing his next mission - “freeing Phil the Ostrich”. Kieran's enthusiastic attitude and an established pattern of success suggested that readdressing the fear issue was timely. The first step of the process was the repeated exposure to the usage of the word tap in different contexts that would habituate Kieran to the sound of the word, enabling him to understand that one word may hold more than one meaning, and also to prepare him for gradual exposure to the actual act of tapping. To ensure Kieran's highest degree of engagement in the fictional context, the new story was built on his “correspondence with the dragon”. The new story was introduced with a letter from the dragon asking for Pete's (Kieran's character) help:

*'Dear Pete,
Thank God, you are back! I received a message from Edwina that Phil the Ostrich is trapped
in a cage! Please find him! He is the only one who knows where my son Dr Pat or
alternatively known as Mr Tap is... I really miss him. Can you help me?
Yours,
Dragon'*

The Dr Pat/MrTap character was invented to validate Kieran's interpretations of the word pat as positive and tap as negative, in view of engaging him in a process that would motivate him to explore alternative meanings for the negatively valenced word tap. Kieran was eager to help the dragon and to find Phil. Having established Kieran's motivation to solve the new problem, the seeds for the confrontation with the fear stimulus were planted. If successful, Kieran would have to face up to Dr Pat or Mr Tap. Meanwhile, Kieran was told that a long and difficult journey full of dangerous adventures lay ahead of him, amongst these adventures was *the forest of the tapping rain*. To get through the forest safely, Kieran had to wear a *tapping-proof* coat, consisting of seven layers of scarves placed underneath a regular coat. Testing the coat before going on the mission was mandatory. The testing process required wearing the padded coat and allowing oneself to be tapped. For every layer removed, a drop of tap water was recommended to counteract the missing layer. The purpose of the padded coat which allowed for the gradual removal of layers was to initially minimise the sensory element from the act of tapping which Kieran had negatively associated with pain. It was hoped that this would lead to Kieran's initial agreement to a process of gradual exposure to the full sensory experience of being tapped that would restore his distorted cognition of the fear stimulus. The intended use of *'tap water'* on the other hand, was to serve two other objectives: First, to offer Kieran an alternative behaviour to his habitual maladaptive response to tapping (i.e. instead of shouting, he would drink a drop of the special water), and second, to provide him another familiar positively valenced usage of the word tap.

Although Kieran had allowed the facilitator to tap him once and a layer of the padded coat was successfully removed, his overall response indicated that pushing him any further could jeopardise the progress made up to that point. In an attempt to hand over to Kieran the control of the exposure, and provide him with additional motivation to perform the target behaviour, the facilitator gave him a motion sensitive wrist watch that made a funny noise. Before setting off to the forest of the tapping rain, Kieran had to check that his anti-tapping coat was working properly, using the watch. This would motivate him to tap himself and ensure that he did it with sufficient force. Even though intrigued, Kieran was clearly unwilling to tap himself. He wore the watch and then started stretching his hand back and forth for a few minutes, trying to pluck up the courage to tap himself. When he eventually succeeded, he got very upset with himself and kept saying: *"I hope I didn't do that to myself! I hope I didn't tap myself... tell me did I? Did I?"* A minute later he would attempt to tap himself again and a new episode would begin. It was as if Kieran was in a battle with himself. To divert his attention from the tapping issue, and prevent his negative mood from escalating, the facilitator introduced the element of dramatic tension. She told Kieran that he had very little time to get to Phil before it was too late, and led him to engage in a series of physical activities that he usually enjoyed (e.g. going over the mountains, under the tunnel, etc.) to prevent him from dwelling on his negative mood, as well as to induce a positive feeling to antagonise his anxiety.

Having failed to engage Kieran in the process of gradual exposure, a new strategy was attempted; that of *role reversal*. Instead of trying to convince Kieran that tapping was

harmless, the facilitator created a situation where Kieran had to do the persuading. It was hoped that the removal of the pressure of having to endure the tapping himself, would allow Kieran to focus on the positive and benign aspects of the tapping. To get the information he wanted from Phil, and find the dragon's son, Kieran had to lift the spell of silence that evil Edwina had placed upon Phil. To do that, he had to convince Phil, who was allergic to tapping, to allow himself to be tapped.

Raising the *tapping* issue again was clearly overwhelming for Kieran. Nonetheless, motivated to solve the case, he agreed to play along. He said he would do what had to be done, even if he hated it. Notwithstanding this, as soon as he saw Phil, Kieran got agitated and instead of talking to Phil, as agreed, he aggressively tapped him. At this point it became apparent, that Kieran had reached his tolerance threshold for the day. In fear of jeopardising his motivation to solve the case if pushed any further, the session was concluded with a thanking note from Phil to Pete, and a request to see him again. The note read: *"Thank you! But I still cannot speak. Will you come to meet me again?"* The purpose of the note was to validate Kieran's efforts to solve the case, as well as elicit a response that would give us an insight on how he was coping with the demands placed upon him. Kieran replied to the note as follows: *"Sure. I am a rescuer. And after I free you, I'll save your Pals I haven't met!!!"*

At the end of the session Kieran wrote on his diary:

I met our 1st trapped Pal, Phil the ostrich. I talked to him about jail cells and how I'd rescue him. I need to come up with a good way if I'm to free Dr P and Mr T.

2.3.5 Session 5: Lift Phil's spell

Notwithstanding his determination to solve the case, as reflected in his notes from the previous session, Kieran's apparent distress and reluctance to convince Phil that tapping was harmless, suggested that the fictional context had failed to provide him with the necessary *protection* that would have allowed him to overcome his reality based limitations and assume a different role in drama. As a result, coming up with arguments, that were at variance with his deeply held beliefs, proved to be an impossible task for Kieran. A plausible explanation maybe, that the fictional scenario was too closely related to Kieran's everyday experiences, where his belief that tapping was malicious, had been explicitly or implicitly challenged. To address this issue, the new dramatic episodes were carefully designed to provide Kieran with a fictional context that bore no resemblance with his real life experiences. Principles from the CBD model, as applied to phobias, described in the earlier paper [23] guided the structure of the ensuing sessions. Recognising that in this case rational arguments could not serve to defeat an irrational fear, a logic for the fear was created and within this logic a solution was sought. A new fictional context was therefore created where the meaning of the word tap justified Kieran's fear. At the same time contradictory interpretations of the word were also presented to assist him in resolving the case, and convincing Phil otherwise.

The session was introduced with a recording from the dragon suggesting that Kieran should look inside the room for a note that could help him solve the case. The note read as follows:

Tap (*origin of the word to be found in pre-historical times*)

To dig 2 fingers with very long nails into someone's skin, causing severe injury. An unfriendly gesture used to instigate war in pre-historical times; abolished in our days; now days often used as synonymous with 'scood'.

Pat

To strike gently with the palm of the hand or with all 5 fingers, usually used as an expression of affection, approbation.

Scood

To strike gently with two fingers, usually used to alert somebody to danger or draw someone's attention to something. It has to be gentle otherwise, it might be considered as tapping (an aggressive gesture) that may instigate war.

Kieran read the definitions very carefully and discussed them with the facilitator, who explained to him that Phil's fear of tapping could be due to his inability to tell the difference between the three types of touching, and emphasised that the action previously described as tapping, had been abolished from the modern world, and that the word *tapping* was now only used as synonymous with *scooding*, meaning to draw someone's attention.

To prepare Kieran for his meeting with Phil, the facilitator simulated Phil's reaction to being tapped. This involved Kieran tapping the facilitator and the facilitator responding by shouting and rolling around on the floor. Kieran found Phil's reaction very funny, and kept tapping the facilitator to produce the response. Seeing Kieran entirely relaxed, enjoying the tapping and rolling game, the facilitator asked him if he was okay to swap roles. Kieran happily agreed. In his role as Phil, Kieran responded in a manner that was unexpected and did not reflect the modelling of the facilitator. Instead of shouting and rolling on the floor, he responded with a funny *huh*. From that moment onwards the facilitator took every opportunity to tap him (e.g. look at this cute baby, look at that girl playing rugby, etc). Kieran, clearly amused with the game, responded with a *huh* every time he was tapped. Although the rehearsal was intended merely as a preparation for the encounter with Phil, Kieran made unexpected progress and allowed himself to be tapped for the first time. Nevertheless, it was decided to persist with the plan of the encounter with Phil to retain the momentum in the drama and consolidate his newly acquired tolerance of tapping. What follows is a transcript of the conversation between Kieran and Phil:

Kieran: Hi Phil!! I came to free you!

Phil: How are you going to do this? (Phil was asking the questions in writing, as he was under a spell and could not talk). Kieran started talking to Phil about the definitions of tapping, patting and scooding.

Phil: But isn't tapping bad

(From this question onwards Kieran took the initiative to reply in writing).

K: Not really. It's only meant to make you go, Huh? It's not really a touch; it's more of an attention drawer.

Phil: What is it?

K: Well, an attention drawer's name, originate from "draw attention". For example if a poster catches your eye, you look at it...

Phil: How do you tap someone?

Kieran attempted to tap Phil. Phil protested, and asked him to explain it to him in words. Kieran then drew a sketch of one boy tapping another.

Phil: Would you mind if I tapped you? If you are ok with it, I might be ok too.

Kieran agreed, and when Phil tapped him, he turned with a huh, and said to Phil enthusiastically that every time somebody tapped him he just went huh? Seeing Kieran's delight in responding to tapping with a huh, the facilitator took the opportunity for further exposure, to consolidate the progress that Kieran had made, up to that point. The intention was to disconnect the fear stimulus from Kieran's past maladaptive responses, by pairing it with his new positive response. The game was therefore repeated many times. The session concluded with Kieran convincing Phil to allow him to tap him and Phil finding his voice.

2.3.6 Session 6: Dr Tap and Mr Pat

Having addressed the tapping issue successfully for the first time in session five, the objective of session six was to consolidate the progress made. To this end the drama was designed to offer Kieran an experiential understanding, and a concrete reminder that tapping was no longer a threat.

To recap on the previous episode, and to ensure that Kieran remembered the three different definitions of touching, the first task required him to draw pictures of patting, tapping, and scooding, which he animated as Dr Pat, Mr Tap and Mr Scood. Another purpose of the task was to provide Kieran with a visual representation of the definitions that could help him to retain them in his memory. Kieran drew three sketches and wrote: 'Well done' in the bubble over the head of Dr. Pat, and 'hate you' in the bubble over the head of Mr Tap, who he had depicted with long ugly nails. His sketch of Mr Scood, depicted him 'scooding' another cartoon character named Cassius. In a bubble over Cassius head he had written 'huh?' Kieran explained to the facilitator, that the thought in Scood's head was to call Cassius's attention. Next, the new episode was introduced with a recording from the dragon intended to consolidate Kieran's positive response to tapping and pre-empt any regression. In the recording the Dragon congratulated Kieran for succeeding in lifting Phil's spell and thanked him for being a true friend. Kieran responded with great enthusiasm to the recording. On hearing the dragon calling him a true friend, Kieran's face lit up with a big smile as he whispered to himself proudly, "*that's what I am!*"

To prove his friendship and loyalty to the dragon, Kieran now more than ever, had to find the dragon's lost son and bring him back home. To succeed, Kieran had to lift the spell that the wicked witch Edwina, who hating that tapping was abolished from the world and wanting to re-establish it, had cast on the friendly dragon Dr Pat and turned him into the evil Mr Tap, with the long horrifying nails. Once the spell was lifted, the world would be 'tap free' forever, and Edwina would lose all her power to evoke pain.

Following Phil's advice, on how to lift the spell from the dragon's son, Kieran sneaked into Edwina's house, stole her special scissors and went off to find Mr Tap. He waited until Mr Tap went to bed, and when he was sound asleep approached him and carefully cut his nails. The cutting of the nails, was designed to offer Kieran a hands on experience to increase retention of his recently acquired knowledge that tapping was abolished from the modern world, and that the word tap was now only used as a synonym with the word scood. Although, the successful completion of the task gave Kieran great satisfaction and a sense of achievement, the quick pace of this highly dramatic activity was not conducive to reflection. Therefore, the next task aimed to slow down the action, and offer Kieran the opportunity to reflect on the experience. To complete the transformation of Mr Tap to Dr Pat, Kieran had to re-programme him. This entailed talking him out of tapping and into 'scooding', while still asleep. To do so Kieran used a tape recording of his own voice speaking the definitions. Once Kieran, had converted the evil Mr Tap into the friendly Dr Pat (who only

knew how to *scood* and pat) he reported his achievement to the dragon. The session was concluded with a well done note from the dragon.

At the end of the session Kieran wrote:

"We've sailed to the island, of stolen scissors, and reprogrammed Professor Tap into Dr Pat. The Dragon gave me mail for congratulating me. Together with Cassius and Phil, we saved the day..."

Acknowledging that Kieran's overall tolerance of tapping had dramatically increased in the last couple of sessions, the focus of the subsequent sessions was shifted away from Kieran's fear of tapping, to give priority to other goals. Nonetheless, opportunities for further exposure for the purposes of maintenance and generalisation were systematically offered within and outside the dramatic context. Kieran's parents were also prompted to provide opportunities for further exposure outside the therapeutic context.

3. RESULTS AND DISCUSSION

Prior to the intervention Kieran's parents reported that his oversensitivity to being tapped was first observed when he was five years old and had reappeared in the past couple of years. Kieran would shout and scream every time someone accidentally tapped him. His extreme oversensitivity had become debilitating for Kieran, as it would cause him daily frictions with his peers at school and would also prevent him from playing in the yard during breaks. In keeping with parental reports, in session behaviour observation of Kieran's reaction to being tapped, prior to the intervention, revealed his inability to cope with his fear. On one occasion when the facilitator had accidentally tapped Kieran, he started shouting that he wanted to quit the drama which he loved and kept hitting himself, saying that he wanted to inflict pain to himself to ease the pain of the tapping.

Following the intervention, Kieran's parents reported that they had noticed a vast difference in Kieran's ability to cope with tapping and felt that tapping was no longer an issue. Kieran's father gave an example of an incident where he had accidentally tapped Kieran, and to his great surprise he had not reacted at all. Behavioural observations of Kieran's in session behaviour once his fear of being tapped was first successfully confronted in drama were maintained until the programme was completed, nine months following the intervention for the fear of tapping. A five year follow-up revealed maintenance of behavior changes.

The current study examined the effectiveness of the Cognitive Behavior Drama model in reducing childhood fears. The results support the findings of a previous study conducted by Karnezi and Tierney [23], indicating complete elimination of fear related symptoms in the same participant who suffered a severe and enduring fear of hand-driers and the generalization and maintenance of the adaptive behavior outside the therapeutic setting for a 5 year follow up period. Although there is no evidence that the reduction in the fear of hand-driers had direct beneficial effect on Kieran's fear of being tapped, it is likely that familiarity with the general approach and self-efficacy expectations played a significant role in the positive outcome.

Earlier attempts by clinicians to address Kieran's fears using traditional Cognitive Behaviour Therapy and Applied Behavioural Analysis were unsuccessful, as any discussion about tapping was met with extreme resistance and anxiety by Kieran. The advantage of the CBD method over these approaches is that the obstacle of resistance is eliminated as discussion

of the fear issue is not a necessary component of the process, allowing the immediate engagement in the therapy. Furthermore, the fictional context creates the imperative tension that provides participants the motivation to overcome their fears.

An important contribution of this study was the detailed description of the treatment of a different fear avoidant behavior that not only further exemplifies the practical application of the model, but also highlights how the specific features of each fear dictate the techniques used and the direction taken.

In the earlier study, where the fear was of a concrete object (the hand-driers) and the exposure easily controlled, the emphasis was placed on behavioral techniques, and drama was used as the *motivating operation* [25] to provide the phobic boy with the motivation to undergo gradual exposure to the feared stimulus. In the present study, as it was not feasible to avoid all situations in which people touched Kieran for the duration of the intervention, a controlled exposure regime could not be achieved. Therefore, emphasis was placed on cognitive strategies intended to alter the meaning of the fear stimulus prior to the exposure, so that Kieran could interpret it in terms of the motivation of the person performing the action. Notwithstanding the emphasis on cognitive strategies, a number of techniques that could be construed as behavioral were also used. For example, the use of the seven scarves and their progressive removal could be considered as gradual exposure and so does the tapping of the baby to prevent it from choking, and the tapping of the frog to wake him up. Furthermore, the entire structure and sequencing of the tasks throughout the intervention, could be considered as based on the behavior momentum principle [26] given that high probability tasks always preceded low probability requests, such as the exposure to the fear stimulus.

Interestingly enough, some of the same strategies, such as the tapping of the baby and the frog, could also be interpreted as cognitive, since besides offering opportunities for exposure, they also extended Kieran's understanding of the word tap, offering him new positive interpretations of the word. Following the same rationale, another more overtly cognitive technique was the provision of concrete definitions of the different types of touching that would allow Kieran, who was diagnosed with Asperger syndrome, often associated with theory of mind deficit [27,28,29] to distinguish instances of being touched by another in terms of the intentions of the actors. The definitions also provided Kieran with a justification for his avoidant behavior, describing the word tap as an aggressive and offensive action; a strategy consistent with the approach taken in the previous study [23] where his fear of hand-driers was also justified. On the premise that irrational fears are internally controlled, and cannot be defeated with rational arguments, a logic for the fear was created and within this logic a solution was sought.

Another strategy based on cognitive principles that could be interpreted as a variant of *rational disputation* [12] was Kieran's task to convince Phil that tapping was harmless. However, here, unlike traditional CBT, it was not the therapist who had to come up with rational arguments to convince the client that his fear was groundless, but the client (Kieran) himself, who had to do the convincing. It is important here to note that the strategies used in a CBD program are not predetermined but rather decided along the way, in response to the participant's reaction on the given tasks. During the course of the treatment a number of strategies are tried, some of which have to be withdrawn, based on the facilitator's perception of the participant's emotional state and the anticipated likelihood of success.

A number of examples illustrating instances where the facilitator had to back-down and shift away from the original plan include: allowing Kieran to feed the apples to the frog, instead of eating them himself; switching to other activities that Kieran enjoyed when the wrist watch proved to be overwhelming; give Kieran written definition for the word tap instead of expecting from him to formulate his own arguments. Removal of the pressure for exposure may be necessary for a short period of time, so that therapeutic objective stays implicit, and the process doesn't become threatening for the participant. However, it is the facilitator's role to keep nurturing the child's motivation to confront the fear stimulus, providing alternative opportunities for success, that will reinforce the participant's engagement in the process, increase his/her self-confidence to confront the fear stimulus at a later stage in the program.

The current case study, high-lights the importance of the flexibility required in order to maintain the child's sense of security within the therapeutic setting, as well as keeping him/her interested in solving the fictional problem and developing his/her self-esteem. The flexibility just described, places restrictions on the type of research that can be conducted to demonstrate its efficacy.

4. CONCLUSION

The unique feature of this model lies in its potential to immediately engage young children in the therapeutic process, offering them a rational justification to their "irrational" fears and the motivation and opportunity to overcome them, eliminating time consuming resistance to therapy. The child's strengths and special interests are taken into consideration to create an appealing fictional scenario that leads the hero (phobic child) to an in vivo exposure to the fear stimulus. Cognitive and behavior techniques are employed to facilitate the exposure. The specific characteristics of each case dictate the emphasis on the cognitive or the behavioral techniques used.

To date the evidence for the efficacy of the CBD method is derived from two single case studies. It might seem the next logical step would be to evaluate the method using a randomized control trial approach. However, this would entail the use of manualized treatments, which would compromise the flexibility and customization of the approach to the specific interests and strengths of the each individual. Taking this into account future research will have to continue with the case study design, providing detailed descriptions of the interventions and the rationale underpinning the CBD model that could serve as guidelines for other therapists to apply it and assess its usefulness on a range of problem.

CONSENT

All authors declare that written informed consent was obtained from the parents of the participant for publication of this case report and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 declaration of helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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