

## Clinical Perspective

# A case of effective single-session treatment for attention deficit and learning problems in a routine clinical practice: the value of a transdiagnostic approach to case formulation<sup>1</sup>

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This article reports a systematic clinical case study of the psychological assessment and treatment of Daniel (9), a coloured South African boy with a diagnosis of attention deficit hyperactivity disorder (ADHD) (inattentive type). The case is of scientific interest because: (1) there was only a single treatment session, in which contingency management training was delivered to Daniel's parents and teacher; (2) there was evidence for the effectiveness of the intervention immediately and at two-year follow-up; (3) it documents the transportability to a South African context of an intervention developed by overseas research; (4) it documents the central role of case formulation in the delivery of effective psychological interventions; and (5) although Daniel met the criteria for ADHD, he also displayed symptoms of depression and social anxiety and the case supports the use of a transdiagnostic approach to case formulation. The conscientiousness with which his parents and teachers applied the programme was a major factor in the effectiveness of the intervention, and such rapid impact would not be possible where parents and teachers are unavailable or not co-operative. The publication of systematic case studies such as this one is important for the development of a local evidence-based practice in South Africa.

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## Introduction

There is a growing recognition of the importance of case studies as part of the foundation of evidence-based practice in psychology (Goodheart 2005, Kazdin 2006). Excessive emphasis on demonstrating the efficacy of psychological treatments by means of randomised controlled trials has led to the marginalisation of practitioner-oriented research which examines how interventions work in practice, and how they are developed and refined in local contexts (Edwards, Dattilio and Bromley 2004). Well documented and systematically reported case studies provide data relevant to work with individual clients that cannot be provided by group comparison designs. Fishman (2005), one of the founders of the online journal *Pragmatic Case Studies in Psychotherapy*, has argued that systematic case studies which contribute to the scientific project of developing and refining psychotherapy interventions call for a presentation format that differs somewhat from that traditionally used for research articles. It is this format that has been followed here.

## Case context and research methodology

### *The clinical setting in which Daniel was assessed and treated*

Daniel was in Grade 3 (he had never repeated a grade) when his teacher became concerned that his scholastic performance was deteriorating. Believing that he might have attention deficit hyperactivity disorder (ADHD), she referred him to a psychologists' practice that specialised in working with children with this diagnosis. He was assessed and treated by the first author of this paper. Daniel (9), like the majority of patients attending the practice, was coloured. The term coloured was used during the apartheid era to describe one of the four legally defined racial groups. It has been argued that the category was politically useful to the apartheid regime as it provided a buffer between the privileged white and deprived black groups in South African (Pickel 1997). Coloured people constitute a majority of the population in the Western Cape and Northern Cape provinces of South Africa. Although some 10% speak English, most speak Afrikaans as their mother tongue. Daniel, his parents and their extended family had lived in Cape Town all their lives and both parents were bilingual, as are most members of this group in the Western Cape.

### *Rationale for selecting the case*

The case has been written up as a systematic case study for three reasons. First, it provides an opportunity to evaluate the transportability of a psychological treatment developed in First World countries to a routine case in a local South African practice. Second, it was possible to obtain follow-up data which provided a basis for evaluation of the long-term effectiveness of the intervention. Third, although Daniel was given a diagnosis of ADHD and the treatment given has been shown to have been effective for this disorder, he also showed evidence of depression and social anxiety. The intervention was a systemic cognitive-behavioural intervention based on a formulation of the factors maintaining Daniel's problems. The formulation was therefore based on a psychological analysis rather than a psychiatric diagnosis and addressed common processes contributing to his ADHD, depression and anxiety. The case illustrates the importance of case formulation in the design and delivery of psychological treatments, and lends support to those who argue for a transdiagnostic approach to understanding factors that maintain psychopathology.

### *Research methodology*

The quality and evidential value of a case study depend on the thoroughness with which the case is documented. The quality of the documentation in turn depends on the performance of a systematic assessment, which includes both qualitative information and, where appropriate, quantitative data using psychometric tests or individualised self-report scales. The assessment itself is not undertaken as a mere exercise in applying assessment techniques, but is problem-oriented, designed to answer questions not only about diagnosis, but about the factors underlying the development and maintenance of the presenting problem (Fishman 2005).

The second factor essential for a meaningful case study is the quality of the theoretical formulation. The assessment process is guided by conceptualisations relevant to the kind of problems the client is experiencing and the data gathered during the assessment are used as the basis for a case formulation that is matched to the details and context of the case (Persons and Tompkins 1997, Sim, Gwee and Bateman 2005, Westbrook, Kennerley and Kirk 2007). In turn, the formulation informs the details of a treatment plan which is designed to target the factors identified as maintaining the problem. Where these processes have been systematically applied and carefully documented by means of detailed notes and summaries kept on an ongoing basis, the data are likely to be of sufficient quality to construct a case study that can make a contribution to the scientific literature.

Third, for a case study to be of value, the case material must bear on questions that are significant for the development and refinement of psychological practice. Because the formal research literature contains so few case studies and relatively little qualitative research, there is a paucity of documentation of the kinds of grounded problems that clinicians encounter when applying interventions in local contexts. Furthermore, while there are often references to the problems

posed by culture in the implementation of interventions developed in the First World, there is limited documentation of the extent to which these problems pose a significant limitation of the generalisation of interventions for example into local South African communities. Documentation of local South African cases therefore provides useful data for the evaluation of questions about the impact of local cultural contexts on the use of psychological interventions.

### **Sources of data and quality control**

Several sources of information complemented each other and contributed to the development of a case formulation and treatment plan which was matched to the context of Daniel's life. These included:

1. Self-report intake questionnaire: Before they were interviewed, Daniel's parents completed a self-report questionnaire which inquired into their son's developmental history, social and emotional functioning both at home and at school, and the nature of the presenting problem.
2. Parent interview: An interview with Daniel's parents furnished further information about his behaviour and activities amongst his peers and siblings within his school and home environments.
3. Teacher's report: Daniel's teacher provided a complete report on his scholastic history and his current academic performance, and gave a detailed account of his behaviour socially and in the classroom.
4. The Conners Teacher's Rating Scale (CTRS) (Conners 1969) was completed by Daniel's teacher as part of the assessment. Although this scale has been revised (Conners et al. 1998), the original version is still widely used (Cordes and McLaughlin 2004). The scale was completed again one month later.
5. Psychometric testing: During two assessment sessions, locally standardised scales – the Senior South African Intelligence scales – Revised (SSAIS-R) (Van Eeden 1997) and the ESS1 Reading and Spelling scales (Esterhuyse and Beukes 1997) – were administered to Daniel.
6. Session records: These were systematically recorded in the form of process notes.
7. Daniel's drawings and personal notes: These were collected during the course of the intervention and retained.

### **Confidentiality and ethical aspects**

Normal professional standards of confidentiality of client information were adhered to while the case was being assessed and treated. Subsequently, Daniel's parents gave permission for the case material to be used for the preparation of this publication. It was agreed that pseudonyms (Daniel and Crystal) would be employed and that no information that might make it easy to identify the child or the family would be included.

## **Background information and psychological assessment**

### **The assessment process**

The assessment took place over four sessions – two with Daniel, one with his parents and one with his teacher. Daniel, his parents and teacher were all asked about his experience and behaviour in the classroom, the playground and at home. Although Daniel seemed happy to come into the sessions unaccompanied, he initially preferred to communicate on paper. The clinician wrote down questions and he would respond. Whilst he seemed to relax into the sessions, on occasion he appeared anxious, particularly when faced with unfamiliar tasks. He responded to a series of written questions, for example, 'What makes you happy or sad and why?', 'Do you like school?', 'Who do you play with at breaks?', and 'Whom do you find it easier to talk to, your father or your mother?' In due course, he was comfortable expressing himself verbally, and his general demeanour during sessions was happy and contented. However, when questioned about his peers, he always changed the subject to cars, which he loved, and spent much time in the session drawing and explaining about different car models.

### **Daniel and his family**

Daniel appeared to come from a loving and warm family. Daniel's father, a driver for a freight service, and his mother, a primary school teacher, seemed to be devoted to him and maturely concerned about his well-being. There had been no complications with respect to the pregnancy or

birth and, although he never crawled, he achieved his milestones sooner rather than later. Daniel appeared to be in good health with normal vision and hearing. He presented as well-mannered but rather shy. He was described as not only shy, but very sensitive, prone to anxiety and insecurity, and constantly in need of reassurance.

By contrast, his younger sister, Crystal (7), was strong-willed and confident and freely ordered Daniel around and told him what he should and should not do. He in turn seemed to comply with her every whim and appeared powerless to control her. He reported that he loved his sister, and enjoyed playing with her, but admitted that at times she was 'very naughty' and made him cry. Although generally obedient, there were times when his parents asked Daniel to do something, such as tidying up some toys, that he would either appear to forget altogether or leave the task unfinished and start doing something else. Once, when asked to help with washing the dishes, he left the tap running and water overflowed the sink. Attempts to discipline him by spanking or sending him to his room had not changed these behaviours.

His teacher reported that he often left books at home and failed to complete homework assignments. His parents had responded by taking it in turns to help him each evening, spending considerable time going through all the homework, as well as assisting him with the tasks he did not complete in class. They reported that they were finding this burdensome, but could never leave Daniel to complete his homework unassisted. Daniel was happy for his parents to help with his homework because 'they help me do good'. However he reported feeling scared when they became angry with him when he did not follow their instructions and made mistakes.

When asked to do a Kinetic Family Drawing, Daniel drew the members of his family very small in the far corner of the page, standing very close together in this order (from left to right): Daniel, mother, father, Crystal. There were no other details such as a house or garden. Although invited to use as many colours as he wanted, he only used black. The restricted nature of the drawing, including its small size, together with the use of the colour black suggest that he was demoralised, even depressed. This conclusion was supported by the fact that in response to projective questions he could not name one thing that made him happy.

### ***Scholastic assessment***

Daniel had difficulty sustaining attention during the assessment and often instructions had to be repeated. This influenced his test performance, as he would regularly lose track of what he was supposed to be doing and have to be redirected back to the task. Generally, his performances were very slow and he would perform at the same speed even when instructed to perform as quickly as possible on the timed tasks. He did, however, respond favourably to praise and encouragement. On the SSAIS-R, Daniel's intelligence was below average (Full Scale IQ = 88) and there was a marked discrepancy between his verbal scale (VIQ = 79: borderline retarded range) and his performance scale (PIQ = 102: normal range). Scores were particularly low on tasks involving attention and auditory verbal memory (Digits Forwards and Backwards and Story Memory), as well as Numerical Reasoning, Vocabulary and Comprehension. The ESSi revealed difficulties with mathematical computations (e.g. he could not perform a simple subtraction) and reading (where he struggled with the phonetic composition of words). These results confirmed Daniel's difficulties in the classroom and explained why he was performing at a level below the rest of the class.

### ***Daniel's behaviour at school***

According to his teacher, Daniel was one of the weaker pupils in the class. He worked very slowly and would always be one of the last to complete written tasks. She described the kinds of problems identified by the ESSi. As there were 40 children in the class, she had limited time to give him extra attention, and other children would become irritated with his slow working speed and call him names such as 'stupid' and 'slow coach'. Although sometimes he paid attention, mostly he seemed to be day-dreaming and had to be redirected to his work. On the basis of this inattentiveness, his teacher believed he had ADHD. Daniel was socially withdrawn and had no friends. His teacher often told him to stay in the classroom during break to finish his work. However, even if he was not working, he would play alone with toy cars or soldiers. He never played with his classmates and

believed that others did not want to play with him, although he sometimes played with the younger children at the pre-school. On the CTRS, his teacher rated ten of the items as 'Very much'. These were: Inattentive, easily distracted; Fails to finish things he starts; Short attention span; Daydreams; Overly serious and sad; Isolates himself from other children; Appears to be unacceptable by the group; Appears to be easily led; Appears to lack leadership; Submissive; Shy.

Daniel made it very clear that he didn't like school. He was aware that he worked very slowly, was performing poorly and made 'a lot of mistakes' and that his teacher regularly had to show him what to do. He felt demoralised because, although he tried hard, he repeatedly got things wrong. While other children got things right and would be given 'star stickers in their books', he never got a star sticker. This was exacerbated by the fact that they never talked to him and called him names such as 'stupid'. He also described significant anxiety, especially during tests. Although his parents always went through the work with him the night before, he would become so anxious in class that he would sometimes forget the answers. He was also scared to put up his hand to ask for help because he was afraid of being reprimanded. He was also afraid of getting into trouble if he left his work at home or did not do his homework.

### **Guiding conception and relevant research**

#### ***Options for intervention in the treatment of ADHD***

Two treatments have been shown to be efficacious in treating ADHD: cognitive-behaviour therapy (CBT) and medication (Pelham 2002). CBT interventions are designed to assist in the management of inattention, to improve academic performance, to build social skills, and to reduce disruptive behaviour. They are designed following a comprehensive psychological assessment in which detailed information is gathered about the affected child's level of inattention and concentration in the classroom, problems with academic progress and learning deficits, disruptive behaviour, motivation, negative thoughts and self-esteem. The effect of the intervention is evaluated on an ongoing basis and follow-up evaluations are conducted to ensure that behaviour change is being maintained and transferred to the various contexts of the child's life (Kazdin 2001, Pelham 2002). The goal is to produce an observable change that is clinically significant. Thus, effectiveness is determined by how well clients do in real-life situations and how they are evaluated by agents such as parents, teachers and peers (Kazdin 2001).

In individual CBT, therapists work with the children themselves. Impulsivity seems to be due to deficits in habits of awareness and self-control (Fraser, Belzner and Conte 1992). Children are therefore taught to regulate their own behaviour through self-control strategies such as self-monitoring, self-instructional training, problem-solving, cognitive rehearsal, self-reinforcement, and self-evaluation (Pelham 2002). However, more widely used are interventions that target teachers, parents or other caregivers, who are seen as the main change agents. They are trained to implement contingency management programmes in the everyday contexts of the child's life, at school and at home. Specific behaviours are systematically reinforced through the use of rewards in the form of attention and praise as well as stars or tokens that can be exchanged for privileges or goods. Punishments are included in the form of reprimands, time out, and response cost (loss of privileges/rewards). The change agents are trained to precisely identify target behaviours in response to which rewards or response costs will be systematically delivered. Since specific rewards and response costs do not work equally with all children, it is important to identify those that are meaningful for the child. Parent training may be offered individually or as part of structured group programmes (Anastopoulos and Farley 2003). An integration of home and school programmes may be achieved by having teachers give the child a daily report card on which the child receives points for certain target behaviours in the classroom. The child takes this home and is rewarded by the parents on the basis of targets achieved (Pelham 2002).

More intensive treatments can be offered in specialised facilities where intensive and systematic contingency management is delivered by highly trained teachers and support staff. For example, in Pelham, Greiner and Gnagy's (1997) eight-week Children's Summer Treatment Program, children were placed into age-based groups of 12, supervised by clinicians. Each group spent two hours



daily in classrooms where behavioural interventions and other types of instruction were provided. Recreational group activities took place for the rest of the day. Parents attended parent-training classes and used the skills learned to implement contingency management at home and track and reward appropriate behaviours at home and at school.

ADHD can also be treated with medications that increase the child's capacity to sustain attention. While often used alone, they can also be employed in conjunction with contingency management. The advantage of combination treatment is that the behavioural component of treatment can be less intensive and can be tapered earlier, thereby reducing the amount of time parents and teachers need to spend on shaping behaviour. Second, the dose of medication required may be lower when CBT is also used.

### ***Efficacy of the clinical method***

Although individual CBT was popular in the 1980s and early 1990s for the treatment of ADHD, research found little support for its efficacy and it is rarely used alone (Pelham 2002). From international research, mostly from the USA, Pelham, Wheeler and Chronis (1998) concluded that parent and teacher training in contingency management is an efficacious intervention that meets criteria for well-established treatments. Positive reinforcers alone do not produce consistent behavioural changes in children with ADHD, and programmes need to include use of explicit tokens as rewards as well as punishments in the form of response costs or time-outs (Abramowitz, O'Leary and Rosen 1987, Pfiffner and O'Leary 1987, Barkley 1989, Rosen *et al.* 1984).

Over a 14-month period, with about 600 children aged seven to nine, the MTA Cooperative Group (1999) used parent and teacher ratings to compare three treatment conditions, a carefully managed medication regimen, home and school-based CBT, and a combination of the two. A fourth group received treatment as usual in the community. The medication and combined treatments were more effective than CBT or community care (despite the fact that around 60% of these were being treated with medication). There was evidence for the superiority of combined treatment in addressing oppositional behaviour, internalising symptoms and improving social skills and parent-child relationships. At the end of the study treatments were terminated and all participants reverted to community treatment. At a three year follow-up, all groups showed symptom improvement compared to the start of the study, but there were no differences between the groups. Medication was being taken by 71% of those in the medication and combined groups, 45% of those in the CBT group and 62% in the treatment as usual group (Jensen *et al.* 2007).

On the basis of studies like these, the American Academy of Paediatrics (AAP 2001) published clinical practice guidelines for the treatment of school-aged children with ADHD. These recommend that a comprehensive approach be taken in which treatment programmes are designed in collaboration with parents, child and school staff to target specific outcomes. Initially pharmacological treatment and/or behaviour therapy should be used and the child's progress should be closely monitored based on information obtained from parents, teachers and the child. Adverse affects of the intervention should also be checked, and where targeted outcomes are not achieved, the case should be re-evaluated, the original diagnosis should be reviewed, other interventions should be incorporated and consideration should be given to whether other comorbid conditions need to be addressed.

## **Case formulation and treatment plan**

### ***Case formulation***

The information obtained from the assessment was used as the basis for a cognitive-behavioural case formulation (Persons and Tompkins 1997, Westbrook *et al.* 2007). Whilst it was obvious how his peers contributed to his social isolation and negative self-image, more subtle was the role of his teacher and parents in contributing to cycles that maintained these problems. Daniel appeared to be constitutionally shy, and it was hypothesised that as the first child of loving and attentive parents he might have become over-dependent on their attention. With the birth of his more extraverted sister, he had to deal with competition for his parents' affection as well as with his sister's increasing assertiveness as she grew older. Feeling unable to compete with her or stand up to her, he coped by withdrawing into daydreaming. His parents inadvertently contributed to his poor self-worth and

lack of self-efficacy (Bandura 1989) because his academic difficulties, lack of progress and apparent forgetfulness elicited their attention and care. By doing his homework and sometimes completing assignments for him they maintained Daniel's learned helplessness and reinforced his belief that he could not meet challenges on his own.

Inadvertently, his teacher was also contributing to the problem by focusing on his scholastic weakness, telling him and his classmates that he was 'falling behind' and 'holding up the rest of the class'. In attempting to assist him with his work, her attention was taken away from the other learners, which highlighted Daniel's status as a problem child. She further contributed to his social isolation by keeping him indoors during break. His shyness about engaging with peers was exacerbated by their mocking him, calling him 'stupid' and 'slow', with the result that he felt socially outcast and withdrew from initiating interaction.

It was therefore hypothesised that Daniel's difficulties with concentration, which became salient in the classroom setting, had their origins in his coping with challenges (both academic and social) by withdrawing into daydreaming. This undermined his progress in class as well as in building peer relationships. A set of self-defeating cycles had evolved within which the more he encountered difficulties or failed, the more discouraged he became and the more helpless he felt about doing anything to remedy the situation. This maintained a chronic state of poor motivation and low self-esteem and self-efficacy.

### **Feedback and treatment plan (Session 5)**

A feedback and contracting session was held with Daniel's parents and teacher. The clinician told them that on the basis of the DSM-IV (APA 2000), Daniel met criteria for ADHD (inattentive type – he met six of the nine criteria), for Reading disability and for Mathematics disability. She explained her hypothesis that the symptoms had their origin in the way in which Daniel was caught in a cycle of ineffective behaviours with which he coped by withdrawing and behaving helplessly and seeking help. This led to an ongoing sense of social ineffectiveness and low self-esteem. The approach to treatment was based on the work of Pelham (2002) and the aim of the feedback session was to educate Daniel's parents and teacher about the factors that were maintaining the damaging cycles, and how they, as environmental agents, could use contingency management to impact on these factors in the everyday contexts of home and school. Daniel's parents, who were against the use of medication, welcomed the fact that an alternative approach was available. The clinician also wanted to include individual CBT sessions in which Daniel's negative thoughts and beliefs could be identified and addressed. However, this was not possible because his parents could not afford it.

**School and playground:** When the contingency management approach was explained to Daniel's teacher she expressed enthusiasm for the approach and believed that it would benefit the whole class. She decided that the children would decide together on targets for class behaviour. These would include keeping desks tidy, handing work in on time, completing homework tasks, producing tidy work, doing well in a test, being polite, paying attention, assisting other pupils, being respectful and kind to other pupils, and assisting others who needed help in the classroom. These would be listed on a poster on the classroom wall. All children would have a token container on their desks. Behaviour which complied with the rules would be rewarded by tokens in the form of poker chips. Conversely, for infringements, tokens would be withdrawn. The system would be extended to the playground, where inappropriate behaviour would be reported by the teachers on break duty. At the end of the week, children with the most tokens would be allowed to select something from the tuck shop for a set monetary value. To address Daniel's social isolation, his teacher was instructed to initiate a buddy system: a peer who was popular and academically capable was to sit next to him, assist him with classroom tasks, and accompany him during break time, when Daniel was to go out with the other children.

**Home:** A similar token system was prescribed for use at home. Daniel would be given a checklist of a number of daily targets, such as keeping his room tidy, completing his homework, or feeding the dog. His parents were to allocate tokens for each completed task. Tokens could also be withdrawn for non-compliance. At the end of the week Daniel would be rewarded with a small gift provided he

had received sufficient tokens. Daniel's parents were to set up and supervise a regular routine for him to do his homework. They were encouraged to motivate him to try his best, but he was to do his homework unassisted. Once Daniel's homework was finished, they were to check it to ensure he had completed the set tasks.

### **Effectiveness of the interventions**

There had been only one session of intervention. This was followed by two feedback sessions, which provided evidence that the intervention was having the desired results. Because both parents and teacher had implemented the programmes with care and understanding, no further intervention was offered.

#### ***Parent and teacher feedback (Session 6)***

Two weeks after the programme was implemented both Daniel's parents and teacher were invited to give feedback. Daniel's teacher completed the CTRS again (one month after she had completed the first), but was unable to attend so his parents gave feedback on her behalf.

Daniel's teacher had implemented the token system with very positive results. The learners were observably motivated by the monetary incentive. Generally, there was a good level of compliance in the class. The teacher observed more solidarity amongst the class members in that all the learners were working together in pursuit of common positive goals. Daniel was also motivated by the new programme and noticeably more determined to try where he would not have tried before, although he was never able to achieve more tokens than some of the other children in the class. He also responded favourably to the buddy system and was much less socially isolated. His teacher commented that he was also less anxious during class tests and group tasks and seemed much happier. Although no marked improvement in his scholastic performance was yet evident, she did report improvement in his level of attention and concentration. On the CTRS, only two items (Appears to lack leadership; Shy) were checked as 'Very much' (compared to ten items at assessment), and five items had moved from 'Very much' to 'Just a little' (Inattentive, easily distracted; Fails to finish things he starts, Short attention span; Overly serious and sad; Isolates himself from other children; Appears to be unacceptable by the group).

At home, too, Daniel was responding well to the token system. He was motivated in his approach to completing tasks allocated to him and would often complete them without being requested to do so. His parents had decided to reward Daniel with tokens at the end of each day. Just before bed time they spent a few minutes going through the checklist. A tick or a cross was recorded in the column next to the task, and this enabled him to monitor his own behaviour. Daniel was excited to receive the rewards and was observably distressed when tokens were withdrawn. This had happened on only two occasions when he had been involved in fighting with Crystal. Only one change was suggested: concerned that as time went on Daniel would be less motivated to earn tokens, the therapist suggested they be replaced with coins.

#### ***Feedback from Daniel (Session 7)***

In an individual feedback session, Daniel appeared much happier and reported that he was liking school and that he had received some tokens from his teacher for doing well in class. He spoke a great deal about his buddy who shared his love for motor cars and with whom he enjoyed spending time. He also spoke about the checklist system that his parents had implemented at home. He explained that he had to do many things during the day in order to receive them and had to work very hard. Daniel reported that he liked receiving tokens, and that he had already received many from his parents. During the session, Daniel also appeared a little bored. This no doubt reflected his shyness, but was also an indication that he did not need individual attention from a therapist. Although the therapist recommended that his parents return monthly for further monitoring, they later explained that the sessions were not covered by their medical aid scheme and did not return.

#### ***Two-year follow-up***

Two years after the intervention was terminated, when Daniel was 11, his mother was contacted by



telephone. She was glad to give further feedback on his progress and reported that at school he was performing in the average range of intelligence and obtaining results of 60% and higher. Daniel had not repeated any grades, no longer received remedial instruction, and no longer spoke about disliking school. His parents had infrequent contact with his teacher, whom in the past they had consulted several times weekly. His teacher would generally describe his progress as good. Daniel had become an avid soccer player and was now playing club soccer. Socially, he had made friends both at school and at his soccer club. He had two close male friends at school and also had a girlfriend.

At home, Daniel's parents still maintained a token system for both children. Tokens had been replaced with pocket money which had to be earned through the completion of tasks. They continued to find this an effective method to motivate them. His mother reported that he completed all his homework independently, but that on occasion they would assist him with class projects.

In response to an enquiry about Daniel's general emotional status and mood, his mother reported that he was fine and that he had always been a very happy and contented child. She seemed to have forgotten about how low his mood was at the time of the assessment two years before.

### Concluding evaluation

The study provides evidence that the intervention was responsible for marked improvement in the problems that Daniel presented with. First, after two weeks of the intervention, parents and teacher were already reporting noticeable changes in a positive direction, and two years later the mother's report showed that she no longer considered Daniel as having significant psychological or behavioural problems. Although evaluation of the impact of the intervention largely relied on the parents' account of behavioural changes, supplemented by an indirect report from the teacher who also completed the CTRS, these reports were quite detailed, especially at the two-week evaluation. There seems to be no reason to doubt that meaningful improvement did take place and was sustained.

There are no obvious alternative explanations for the changes in Daniel's mood and behaviour. Given the longstanding nature of his problems, it is improbable that there was some kind of spontaneous remission. Nor were there any external events not related to the assessment and intervention which could account for the changes. Furthermore, the information given by parents, teacher, and Daniel in sessions 6 and 7 provided evidence that the intervention was having the kind of impact it was designed to do by breaking destructive cycles of cognition, mood and behaviour and allowing Daniel to have positive experiences and to develop self-efficacy both socially and academically.

Although Daniel's problems with respect to attention were prominent, he also qualified for diagnoses of depression and social anxiety. However, psychiatric diagnosis does not translate simply into psychological treatment. The first complicating factor is comorbidity: patients frequently have more than one mental disorder. Children with ADHD often receive additional diagnoses of affective, anxiety and other disruptive behaviour disorders (Spencer, Biederman and Mick 2007). A second complicating factor is that there has been considerable debate about the diagnosis of ADHD. Milich, Ballantyne and Lynam (2001) argue that the inattentive type differs so markedly from the hyperactive type that it should be considered a completely different diagnosis. Key markers for the inattentive type are daydreaming, being lost in thought, and being passive and unmotivated. Barkley (2001) supports this position. A feature of the inattentive type is that it is often associated with internalising disorders, in contrast to the hyperactive or combined type, which are often associated with externalising disorders. Daniel is clearly an example of the inattentive type with associated internalising problems.

However, as Pelham (2001) points out, expending great effort on refining diagnostic categories has limited relevance for psychological treatment, which needs to be designed on the basis of a case formulation. This 'can fill this gap between diagnosis and treatment' (Sim *et al.* 2005: 289). The transdiagnostic approach of Harvey *et al.* (2004) also stresses the centrality of case formulation. These authors draw attention to common pathological social and psychological processes found across different psychiatric disorders. They identify a range of problematic processes (in the domains of attention, memory, reasoning, thought and behaviour) which can contribute to the maintenance of several different disorders. These, they argue, can account for the high prevalence

of comorbidity of psychiatric diagnoses. One mechanism, clearly seen in Daniel's case, is that 'attention is directed away from other information in the internal and external environment that may be useful for learning skills, gaining knowledge, or improving social interactions' (Harvey *et al.* 2004: 63). This process alone could underlie symptoms relevant to diagnoses of ADHD, depression, anxiety and learning disabilities.

Even within a single diagnosis, a variety of processes can contribute to maintaining the problem. This means that different interventions are appropriate for individuals with the same diagnosis. A thorough psychological assessment and case formulation can ensure that interventions meet the needs of individual clients. For example, in treating adolescent depression, Rogers, Reinecke and Curry (2005) use case formulation as the basis for planning interventions.

This transdiagnostic, formulation-based approach was central to the planning of the intervention in the case of Daniel. Although based on a package designed for ADHD, the intervention also specifically targeted Daniel's social isolation and lack of self-efficacy both socially and in his schoolwork. As it turned out, the intervention was delivered in a single session with the teacher and both parents. The subsequent sessions largely provided feedback and only very limited suggestions were made for changing aspects of the intervention. This study therefore illustrates the value of conducting a comprehensive psychological assessment and of using that as a basis for a case formulation that describes the dynamic processes hypothesised to be maintaining the problem (Pelham 2001, Sim *et al.* 2005, Westbrook *et al.* 2007). Without that, Daniel might have simply been given a diagnosis of ADHD, and, if his parents had not objected, been treated with medication. Since medications used to treat ADHD can have depression as a side effect, this could have exacerbated the problem (Breggin 1998).

Although his teacher rated Daniel 'Very much' on the CTRS item 'Overly serious and sad' she had not suggested to the parents that Daniel was depressed. Two years later in the follow-up phone call, his mother clearly did not think of Daniel as ever having been depressed since she stated that he had always been a happy child. By contrast, in response to questions during the assessment, Daniel had been unable to name one thing that made him happy and the restricted nature of his Kinetic Family Drawing also suggested he was depressed. This suggests perhaps that parents and teachers are more familiar with ADHD than depression as a common problem in children and might even be more comfortable accepting the former diagnosis than the latter. From a psychological point of view, of course, what is important is the identification of the processes maintaining the child's dysfunction and distress and the design of an intervention that targets those for change.

The careful application of case formulation is one reason why an effective intervention could be delivered so briefly. However, just as important was the response of the parents and teacher, since the impact of this kind of intervention depends on the responses of the change agents themselves. They were all motivated to implement the programme systematically and already had a good understanding of the underlying principles. This can be seen from the enthusiasm with which his teacher adopted a more structured token based programme for her whole classroom. As a primary school teacher herself, Daniel's mother was also familiar with the problems posed by managing children, motivating them and ensuring discipline. Another positive factor was the fact that both parents were psychologically healthy and had a harmonious relationship (Anastopoulos and Farley 2003). In cases where parents are less motivated, show less insight, are themselves depressed or anxious, or there is marital discord, clinicians can expect to monitor, educate and motivate them over a longer period. In contrast to Daniel, in many cases ADHD is caused or exacerbated by adverse childhood experiences often associated with poverty and dysfunction, abuse, parental mental illness or criminality in the family (Spencer *et al.* 2007). In such cases there may be a complete absence of collaboration on the part of the parents and other family members and such a treatment cannot be delivered at all.

For many children (and adults) ADHD has an organic basis in which there is a deficit in executive functioning caused by under-reactivity in the brain's inhibition system (Barkley *et al.* 2001). In such cases medication can have the effect of stimulating the inhibition system and rendering individuals more amenable to intervention. The outcome in the present case suggests that organically-based difficulties with attention played little or no role in Daniel's presenting problems. Instead, as he had

become more withdrawn and passive, so he had increasingly become demoralised, seeing himself as socially outcast and incompetent. The intervention was effective because it set up positive cycles to replace the dysfunctional ones. As these new dynamic processes took over, Daniel felt more hopeful and motivated as he experienced himself as socially desirable and competent both in his school work and on the playground. This had the effect of maintaining the new processes which completely displaced the old ones.

This case study provides evidence for the transportability of an intervention developed and tested overseas to 'real world cases' (Chorpita 2003: 46) in a routine South African practice setting. It also illustrates what is meant by evidence-based practice. The research literature provides evidence of the efficacy of CBT interventions in the treatment of a range of childhood disorders including ADHD, anxiety and depression. Although Reinecke's (1992) case study of a depressed boy shows that an individual treatment can be effective, other studies suggest that, where criteria for ADHD are met, individual therapy is likely to have limited impact, even if based on CBT principles (Pelham 2002). A systemic intervention was therefore indicated as optimal by the research evidence. At the same time, interventions evaluated in research trials usually need to be adapted by clinicians to the needs of the specific case and the local context. Thus the process of case formulation is central to evidence-based practice since it allows for the judicious integration of research evidence on efficacy with detailed information gained from the assessment and with local contextual knowledge (Goodheart 2006). The formal reporting of the case in a journal allows the case to contribute to the evidence base for future practice.

## Endnote

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## References

- Abramowitz AJ, O'Leary SG and Rosen LA (1987) Reducing off-task behavior in the classroom: A comparison of encouragement and reprimands. *Journal of Abnormal Child Psychology* 15, 153–163
- AAP (American Academy of Pediatrics) (2001) Clinical practice guidelines: Treatment of the school-aged child with attention-deficit/hyperactivity disorder. *Journal of the American Academy of Pediatrics* 108 (4): 1033–1044
- APA (American Psychiatric Association) (2000) *Diagnostic and Statistical Manual of Mental Disorders* (4th edn, text revision). American Psychiatric Association, Washington DC
- Anastopoulos AD and Farley SE (2003) A cognitive-behavioural training programme for parents and children with Attention-Deficit Hyperactivity Disorder. In: Kazdin AE and Weisz JR (eds), *Evidence-Based Psychotherapies for Children and Adolescents*. Guilford, New York. pp 187–203
- Bandura, A (1989) Social Cognitive Theory. In: Vasta R (ed.), *Annals of Child Development, Vol. 6: Six Theories of Child Development*. JAI Press, Greenwich CT. pp 1–60
- Barkley R (1989) Attention-deficit hyperactivity disorder In: Mash EJ and Barkley RA (eds), *Treatment of Childhood Disorders*. Guilford, New York. pp 39–72
- Barkley R (2001) The inattentive type ADHD as a distinct disorder: What remains to be done? *Clinical Psychology: Science and Practice* 8: 489–493
- Barkley RA, Edwards G, Laneri M, Fletcher K, and Metevia L (2001) Executive functioning, temporal discounting, and sense of time in adolescents with attention deficit hyperactivity disorder and oppositional defiant disorder. *Journal of Abnormal Child Psychology* 29: 541–556
- Breggin P (1998) *Talking Back to Ritalin*. Common Courage Press, Monroe, ME
- Chorpita, B F (2003) The frontier of evidence-based practice In: Kazdin AE and Weisz JR (eds), *Evidence-Based Psychotherapies for Children and Adolescents*. Guilford, New York. pp 42–59
- Conners, CK (1969) A teacher rating scale for use in drug studies with children *American Journal of Psychiatry* 126: 884–888
- Conners C, Sitarenios G, Parker JD and Epstein JN (1998) Revision and restandardization of the Conners Teacher Rating Scale (CTRS-R): Factor structure, reliability, and criterion validity. *Journal of Abnormal Child Psychology* 26: 279–291
- Cordes M and McLaughlin TF (2004) Attention deficit hyperactivity disorder and rating scales with a brief review of the Conners Teacher Rating Scale (1998). *International Journal of Special Education* 19: 23–34

- Edwards DJA, Dattilio FM and Bromley DB (2004) Developing evidence-based practice: The role of case-based research. *Professional Psychology: Research and Practice* 35: 589–597
- Esterhuysen KGF and Beukes RBI (1997) *Manual for the ESSI Reading and Spelling Tests*. University of the Free State Department of Psychology, Bloemfontein
- Fishman DB (2005) Editor's introduction to PCSP – From single case to database: A new method for enhancing psychotherapy practice. *Pragmatic Case Studies in Psychotherapy* 1, Module 1, Article 2. Available at <http://pcsplibraries.rutgers.edu/index.php/pcsp/article/view/855/2167> [Accessed 14 November 2007]
- Fraser C, Belzner R and Conte R (1992) Attention deficit hyperactivity disorder and self-control. *School Psychology International* 13: 339–345
- Goodheart CD (2005) Placing psychotherapy case studies within the framework of the APA evidence-based practice in psychology (EBPP) model. *Pragmatic Case Studies In Psychotherapy* 1, Module 3, Article 2. Available at <http://pcsp.libraries.rutgers.edu/index.php/pcsp/article/view/862/2185> [Accessed 14 November 2007]
- Goodheart CD (2006) Evidence, endeavour and expertise in psychology practice. In: Goodheart CD, Kazdin AE and Sternberg RJ (eds), *Evidence-Based Psychotherapy: Where Practice and Research Meet*. American Psychological Association, Washington DC. pp 37–61
- Harvey AG, Watkins E, Mansell W and Shafran R (2004) *Cognitive-Behavioural Processes Across Psychological Disorders: A Transdiagnostic Approach to Research and Treatment*. Oxford University Press, Oxford
- Jensen PS, Arnold LE, Swanson JM, Vitiello B, Abikoff HB, Greenhill LL, et al. (2007) 3-year follow-up of the NIMH MTA study. *Journal of the American Academy of Child and Adolescent Psychiatry* 46: 989–1002
- Kazdin AE (2001) *Behavior Modification in Applied Settings* (6th edn). Wadsworth/Thomson Learning, Belmont CA
- Kazdin AE (2006) Assessment and evaluation in clinical practice In: Goodheart CD, Kazdin AE and Sternberg RJ (eds), *Evidence-Based Psychotherapy: Where Practice and Research Meet*. American Psychological Association, Washington DC. pp 153–177
- MTA Cooperative Group (1999) A 14-month randomized clinical trial of treatment strategies for attention-deficit/hyperactivity disorder: Multimodal treatment study of children with ADHD. *Archives of General Psychiatry* 56: 1073–1086
- Milich R, Ballantyne AC and Lynam D (2001) ADHD Combined Type and ADHD Predominantly Inattentive Type are distinct and unrelated disorders. *Clinical Psychology: Science and Practice* 8: 463–488
- Pelham WE (2001) Are ADHD/I and ADHD/C the same or different? Does it matter? *Clinical Psychology: Science and Practice* 8: 502–506
- Pelham WE (2002) Psychosocial interventions for ADHD In: Jensen PS and Cooper JR (eds), *Attention Deficit Hyperactivity Disorder: State of the Science, Best Practices*. Civic Research Institute, Kingston, NJ. pp 12.21–12.22
- Pelham WE, Greiner AR and Gnagy EM (1997) *Children's Summer Treatment Program Manual: Comprehensive Treatment for Attention Deficit Disorder*. Inc, Buffalo, NY
- Pelham WE, Wheeler T and Chronis A (1998) Empirically supported psychosocial treatments for attention deficit hyperactivity disorder. *Journal of Clinical Child Psychology* 27: 190–205
- Persons JB and Tompkins MA (1997) Cognitive-behavioral case formulation In: Eells TD (ed.), *Handbook of Psychotherapy Case Formulation*. Guilford, New York. pp 314–339
- Pfiffner LJ and O'Leary SG (1987) The efficacy of all-positive management as a function of the prior use of negative consequences. *Journal of Applied Behavior Analysis* 20: 265–271
- Pickel B (1997) *Coloured ethnicity and identity: A case study in the former Coloured areas in the Western Cape/South Africa*. Lit Verlag, Hamburg
- Reinecke M (1992) Childhood depression. In: Freeman A and Dattilio FM (eds), *Comprehensive Casebook of Cognitive Therapy*. Plenum, New York. pp 147–158
- Rosen L A, O'Leary SG, Joyce SA, Conway G and Pfiffner LJ (1984) The importance of prudent negative consequences for maintaining the appropriate behavior of hyperactive students. *Journal of Abnormal Child Psychology* 12: 581–604
- Rogers G, Reinecke M and Curry J (2005) Case formulation in TADS CBT. *Cognitive and Behavioral Practice* 12: 198–208
- Sim K, Gwee KP and Bateman A (2005) Case formulation in psychotherapy: Revitalizing its usefulness as a clinical tool. *Academic Psychiatry* 29: 289–292
- Spencer TJ, Biederman J and Mick E (2007) Attention-deficit hyperactivity disorder: Diagnosis, lifespan, comorbidities, and neurobiology. *Journal of Pediatric Psychology* 32: 631–642
- Van Eeden R (1997) *Senior South African Intelligence Scales – Revised (SSAIS–R)*. Human Science Research Council, Pretoria
- Westbrook D, Kennerley H and Kirk J (2007) *An Introduction to Cognitive Behaviour Therapy: Skills and Applications*. Sage, London