

Using behaviour contracts to decrease antisocial behaviour in four boys with an autistic spectrum disorder at home and at school

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This article describes how a behaviour contract has been implemented to achieve positive and enduring results for four boys with a diagnosis of an autistic spectrum disorder (ASD). Four case studies are described which address reductions in behaviours such as assaultive and destructive behaviour, out-of-seat behaviour, inappropriate contact with others and loud vocalisations, while also increasing the following of directions in the classroom and at play-times. The common thread across all of the case studies is the use of the behaviour contract and the link that is built between home and school. The authors suggest that it is this contingent link that is the basis for the success in each of these studies. Based on their research, they believe that the behaviour contract can be considered an important and useful tool in helping address challenging behaviours in children with an ASD. Emma Hawkins is the Director of Education at The Jigsaw CABAS® School and oversees the implementation of strategies at the school to improve the behaviour of the pupils. Grant Gautreaux, from Nicholls State University in Louisiana, consults at The Jigsaw CABAS® School and is a member of the CABAS® Board. All of the remaining authors work at The Jigsaw CABAS® School and have successfully implemented the behaviour contract in their classrooms.

Key words: behaviour contract, positive reinforcement, antisocial behaviour.

Introduction

Holmes (2008) states that dealing with antisocial behaviour tops the list as the most stressful aspect of teaching. Budgets do not allow schools to offer one-to-one support for all pupils who exhibit antisocial behaviour and budgets are limited for increasing the expertise of the staff team dealing with this behaviour. Schools need to find cost-effective means for managing antisocial behaviour in the classroom.

The Department for Education (DfE, 2010) report that there were an estimated 6,550 permanent exclusions from primary, secondary and all special schools in 2008/9. In the same year there were an estimated 363,280 fixed period exclusions. The most common reason for exclusion (both

permanent and fixed period) was persistent disruptive behaviour. Some 29.6% of permanent exclusions and 23.3% of fixed period exclusions were due to persistent disruptive behaviour and 11.1% of permanent exclusions and 4.7% of fixed period exclusions were due to physical assault against an adult.

The purpose of the current study was to demonstrate the effectiveness of a cost-effective and time-efficient strategy, namely a behaviour contract, to improve behaviour in the classroom and at home. Behaviour contracts can be implemented in many different classrooms, not just in special schools for children with an autistic spectrum disorder, to address antisocial behaviour and reduce the risk of exclusion from school.

Autistic spectrum disorders

Autism is a lifelong developmental disability that affects how a person communicates with, and relates to, other people. Typically, an individual diagnosed with an autistic spectrum disorder (ASD) will have difficulty interacting with others and making sense of the world around them. Generally, they will not learn from their environment in the same way as a typically developing child and will display one or more of the following traits: social impairment, communication impairment, repetitive behaviour (Wing & Gould, 1979).

In many settings children with ASD may exhibit a variety of antisocial behaviours, such as escape/avoidance behaviour, attention-seeking behaviour and self-injurious behaviour. Thus, these behaviours present many challenges to be addressed by the educational community. Effective teachers focus not only on putting strategies in place to reduce the antisocial behaviour, but also on increasing appropriate behaviours as a replacement for the antisocial behaviour.

Addressing antisocial behaviour using a behaviour contract

There has certainly been an increased emphasis on positive reinforcement to address antisocial behaviour in the school setting over the last few decades and its effectiveness has been well established across a variety of pupils (Landrum & Kauffman, 2006). A behaviour contract extends the principles of positive reinforcement from a simplistic token

economy based system to a more sophisticated system incorporating features of self-monitoring and self-management.

A behaviour contract is defined by Cooper, Heron and Heward (2007) as a document that specifies a contingent relationship between the completion of a specified behaviour (such as writing an essay) and access to a specified reward (such as access to the playground for five minutes or access to the computer for ten minutes). There are three major parts in most contracts: a description of the task, a description of the reward, and the task record.

The use of behaviour contracts to address different behaviour issues is well established. For example, Mruzek, Cohen and Smith (2007) used behaviour contracts to increase rule-following of two children diagnosed with ASD. The contracts in the study operated on a daily basis. The process of using the contracts incorporated the children developing the contracts in the morning, reviewing them again in the afternoon, and self-managing the use of their contracts throughout the day. The use of the contracts resulted in a successful increase in the number of hours that the children spent during the school day engaged in appropriate rule-following.

Smith (1994) added a component of parent involvement to the behaviour contract. It was noted that effective collaboration across the home and school environments can be the key to a child's success. Twelve parents participated in the home-school contracting programme. They were first given sufficient training in the contracting procedure. The parents then developed the contracts at home with their children, with the target goals addressing on-task time and work completion in the school setting. The teachers were responsible for evaluating the performance of the children throughout the day and feeding the results back to the parents. The use of the home-school contracts resulted in a 65% increase in on-task time and work completion, in comparison to a control group's increase of only 19%.

Collaborative behavioural contracting is an offshoot of the traditional behaviour contract. It has been shown to be effective for children being reintegrated into the general education teaching environment. Lassman, Jolivet and Wehby (1999) published on the successful use of such a contract. In their study a collaborative behaviour contract was developed detailing the responsibilities of each involved party in the classroom; the child, the special education teacher and the general education teacher. The contract promoted strong collaboration and communication between the child and those assisting in his education. The specific behaviours outlined in the contract made the pupil and the teachers accountable for the completion of certain actions. The use of this contract resulted in the participating pupil meeting outlined goals and successfully rejoining the general education environment.

Behaviour contracts have been applied successfully as a behaviour change technique by teachers, therapists and parents. The focus of this article is to summarise the effects of a behaviour contract, particularly a school-to-home/

home-to-school behaviour contract, on a variety of antisocial behaviours across four children with autism. What is essential to each of the cases described is the contingent link that is created between school and home and the fact that consistency in administering the components of the contract occurs across both of these settings.

Method

Setting

The case studies reported herein took place at The Jigsaw CABAS® School, an independent day school for 40 children and young people with a diagnosis of an ASD aged five to 19 years. CABAS® is an acronym for the Comprehensive Application of Behaviour Analysis to Schooling. Within the CABAS® system emphasis is placed on approving desired behaviours rather than disapproving undesired behaviours. The curriculum is designed to emphasise teaching through positive reinforcement. The establishment of pupil motivation is essential to the implementation of the principles of positive reinforcement within the CABAS® system.

The Jigsaw CABAS® School has ten classrooms where the children are divided according to their ability and verbal behaviour levels. The children within a class are all in the same key stage, but will be grouped according to whether they are all speaking, whether they are all speaking and reading or whether they are all using pictures or sign language to communicate. The majority of the children and young people in the school exhibit some level of antisocial behaviour which is addressed through individualised behaviour guidelines for each pupil. If a strategy such as the behaviour contract is included in a pupil's behaviour guidelines then all staff adhere to those guidelines and are trained to provide a consistent approach.

Data collection

Four case studies are presented. In each study, data was collected by the teachers in the classrooms with the participants. They either used a timer to measure duration of behaviour or pen and paper to score number of occurrences. All behaviour contracts were written up and discussed with parents prior to implementation. Parents provided consent for their children to have a behaviour contract implemented and received feedback on its effectiveness on a daily basis. Each behaviour contract was implemented slightly differently and different target behaviours were focused on with each participant. These are described in more detail within each case study.

Case study 1: Brian

Brian was a 12-year-old pupil with a diagnosis of ASD. A behaviour contract was implemented for Brian based on high levels of time away from his table while in the school setting and exhibiting assaultive behaviour towards others. The specific behaviours targeted were:

- *Time away from the table* defined as leaving the table without permission at any time during his morning lessons (reported as minutes per morning session where total possible time was 160 minutes).

- *Assaults* defined as a physically abusive behaviour against another person (reported as total number of assaults per morning 160-minute session).

The study was conducted using an A-B-C single-subject research design where in Phase A (Baseline) a token economy was in place for correct academic and behavioural responding. Brian was also ignored (where safe to do so), as his behaviour was attention-seeking, and his peers were reinforced being at their tables when Brian was out-of-seat.

In Phase B (Intervention 1), in addition to the above tactics, a daily school behaviour contract was implemented. Brian was required to meet a set number of academic targets per day in order to access preferred activities for an extended period of time. Brian worked with his teacher at the start of each day to agree the targets. For example, he may have been required to work successfully through five academic programmes before he could access the computer for 30 minutes.

In Phase C (Intervention 2), in addition to the above tactics, a weekly school-to-home contingency was added to the behaviour contract. Brian was required to meet a set number of academic targets per week in order to access a preferred activity at the weekend with his family. This added component served to link the contingencies between school and home, thus providing a seamless connection between all.

The behaviour contract was printed every Monday morning at school. The teaching staff reviewed the contract with Brian and outlined both the behaviour expectations and the corresponding rewards. He was then required to sign the contract together with the teacher. His contract was taken home at the end of the day on the Monday and his parent signed his contract. His parents had already been in discussion with the teaching staff regarding the contract and all parties had agreed on all parts of the contract.

The two graphs in Figures 1 and 2 show the effectiveness of the implementation of the behaviour contract. Figure 1 shows the duration of time that Brian spent away from the table during the 160-minute morning sessions. During the baseline phase, when the token economy was in place and he was ignored for being away from the table and his peers were reinforced for being at their tables, the duration of time spent away from the table varied from 0 minutes to 160 minutes. During Intervention 1, the implementation of the daily behaviour contract had an initial positive effect on Brian's behaviour, but his out-of-seat behaviour eventually returned to baseline levels during this phase. It appeared as though the novelty of the procedure waned and it was evident that the school setting may not hold reinforcement value for Brian. This analysis brought to light the need for an additional contingency to be added to the behaviour contract used in Intervention 1. Under these conditions, Intervention 2, the data showed a reduction in the levels of the target behaviours. The data in Figure 1 show six consecutive days of Brian remaining in his chair during the morning sessions in school.

Figure 2 shows the number of assaults that Brian exhibited during this same 160-minute time frame. During the baseline phase the data varied from 0 to 14 occurrences per session. After an initial increase in assaults to 25 in one session once the behaviour contract was implemented, the data then decreased to zero levels. Intervention 2, the implementation of the home-school contingency, led to a consistent level of 0 assaults.

These data demonstrated that there appeared to be a correlation between the implementation of the school-to-home component of the behaviour contract and the reduction in out-of-seat behaviour as well as on the assaultive behaviours exhibited by Brian. The intertwining of contingencies between a daily school behaviour contract and a school-to-home behaviour contract proved the most effective.

The self-management repertoire of the pupil was simultaneously addressed by including choice-making, through Brian's freedom in selecting his own reinforcers, setting appropriate goals, and tracking his progress.

An increased number of positive interactions with staff were also noted. Comments from Brian such as '*I made the right/wrong choice(s)*' were also observed. In addition, staff observed Brian self-managing his behaviour by refraining from leaving the classroom during difficult tasks (for example, walking to the door, then turning around and coming back to his seat independently).

Case study 2: Neil

Neil was a 12-year-old boy with a diagnosis of ASD. A school-to-home behaviour contract was implemented for Neil based on high levels of assaultive behaviour towards his peers and teachers on a regular basis. The specific behaviours targeted were kicking, hitting, pushing and pulling hair; these functioned as attempts to escape and to get attention. The number of daily assaults (the school day being from 9.30am to 4.00pm) were counted and recorded on a monthly basis.

The study used an A-B-C single-subject research design which included the following phases: Phase A was the baseline phase where there was a token economy in place for correct academic responding; Phase B was the phase for Intervention 1 where, in addition to the token economy, 'request cards' were made available to Neil, allowing him to work in a quieter environment if he was uncomfortable with the noise levels in the classroom. A board with ten cards affixed to his desk with Velcro was used and he handed over a card to his teacher when he wanted to work in a different classroom. The rationale behind selecting this type of intervention was to provide an acceptable alternative pathway for escape-maintained behaviours; Phase C was the phase for Intervention 2 where, in addition to the above tactics, a school-to-home behaviour contract was implemented. Neil earned the privilege to watch his favourite television programme that evening contingent upon not exhibiting any assaultive behaviour during that day.

Figure 1: Duration of Brian's time spent away from the table

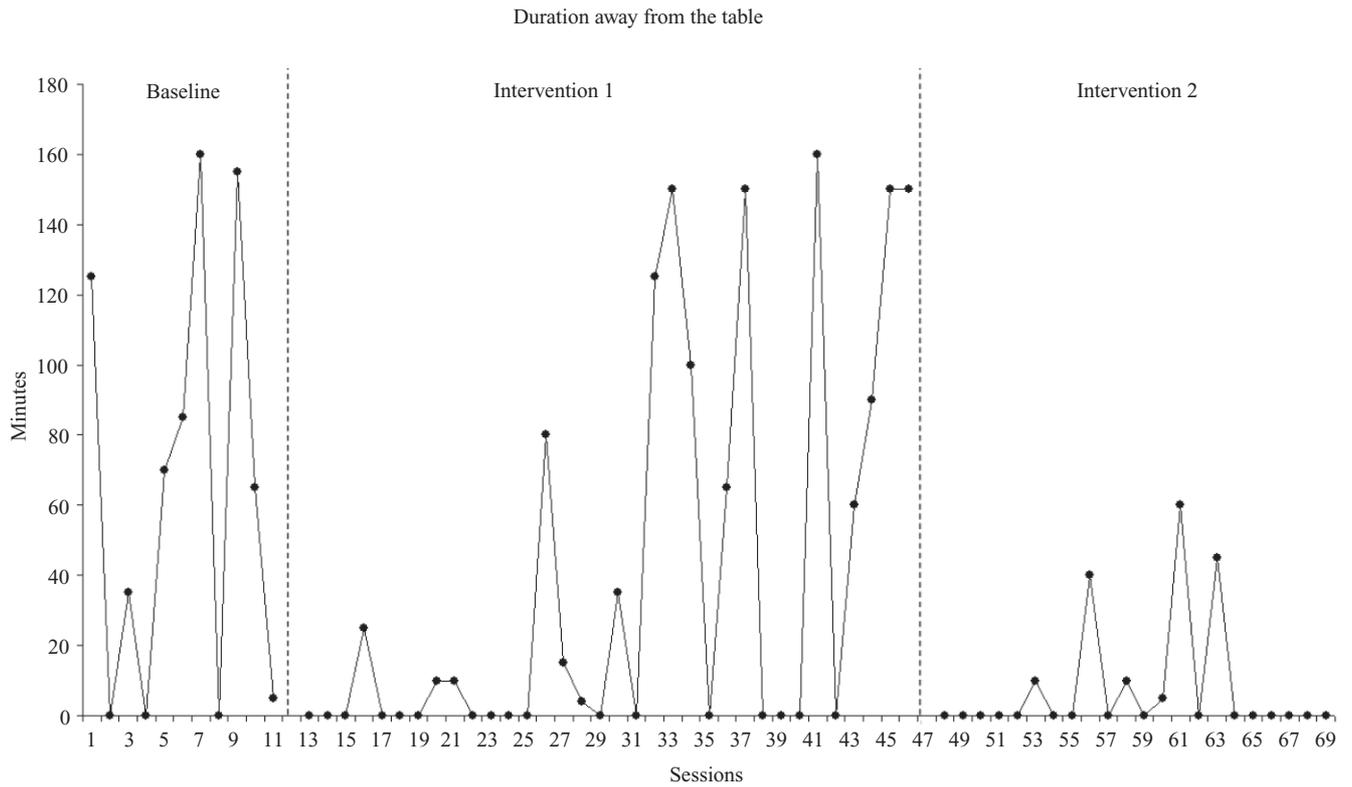


Figure 2: Number of assaults exhibited by Brian

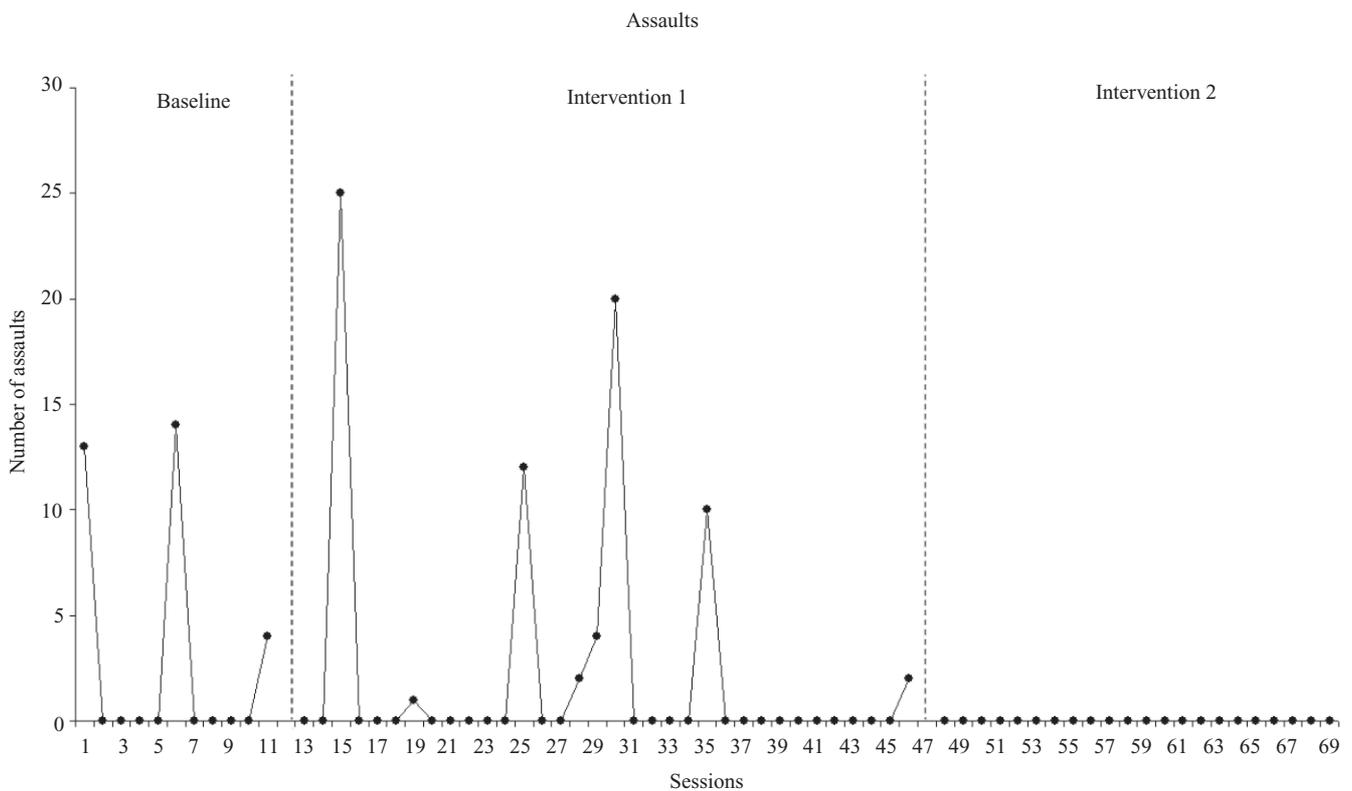
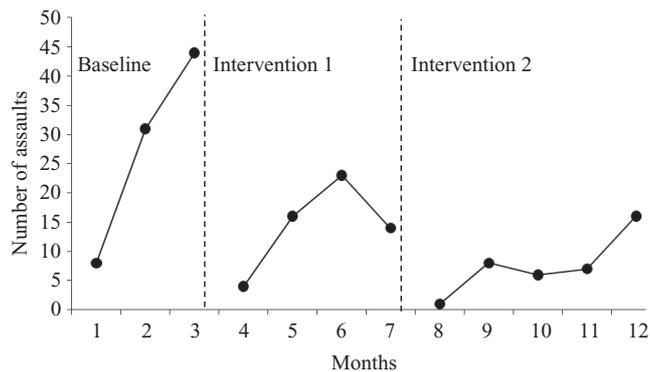


Figure 3 shows the results for Neil, indicating the number of assaults have been recorded on a monthly basis for a full year. The number of assaults during the final phase (Intervention 2) is substantially lower than during the initial phase.

The results were clearly educationally significant for Neil as he consequently spent more time integrated into the classroom which led to more learning than prior to the intervention. It was important to include Phase B as it gave Neil the

Figure 3: Number of assaults exhibited by Neil on a monthly basis



opportunity to leave the classroom if it was too noisy, allowing for an acceptable escape alternative. The data in Phase C, where there was the link with a home-delivered reinforcer, show an even more positive effect on Neil's behaviour.

Case study 3: Matthew

Matthew was an eight-year-old boy with a diagnosis of ASD. He demonstrated a high level of antisocial behaviours in the classroom which disrupted his learning. His level of functioning allowed him to access a mainstream setting with support from staff at The Jigsaw CABAS® School, but he had been withdrawn from this placement due to his behaviour. He liked to touch the hair of other children, especially if they were wearing sparkly hair grips. This escalated to the stage where other children were screaming as Matthew approached them and avoided social interactions with him. The main purpose of the integration placement was to focus on social interaction and therefore it became impossible to continue with the opportunities for integration.

Strategies that were previously implemented with Matthew to reduce this behaviour included:

- Reinforcing intervals of time where he did not touch other people's hair. A favourite toy/activity was used so Matthew would only gain access to it for not exhibiting this behaviour (Differential Reinforcement for the Omission of Behaviour (DRO) procedure).
- Using a good behaviour chart where he earned a tick for intervals of time of not exhibiting the target behaviour. After he had five ticks he gained access to a specific reinforcer. If he emitted the target behaviour then a cross was put on his chart. If he gained two crosses then the chart was wiped clean and he started again (DRO with response cost).
- Staff at The Jigsaw CABAS® School started wearing the sparkly hair grips and he was reinforced for intervals of time for not touching them. This proved to be successful at The Jigsaw CABAS® School, but did not generalise to the mainstream setting.
- The children in the mainstream class were spoken to and encouraged not to react when Matthew approached them. This also proved to be unsuccessful

due to the age of the participants and that it often hurt to have their hair grip pulled out.

Matthew was withdrawn from the mainstream placement and the touching of hair continued at The Jigsaw CABAS® School even with the above strategies in place. Furthermore, out-of-seat behaviour during teaching time continued to be a problem. All aspects of Matthew's educational programming were considered when analysing the context of the problem. His curriculum was reviewed regularly to ensure targets were set at the right level for him and he was receiving reinforcement for responding to his academic targets appropriately.

It was at this point that a school-to-home behaviour contract was introduced for Matthew. The target behaviours were out-of-seat behaviour and touching other people's hair. Out-of-seat behaviour was defined as Matthew leaving his seat without permission, not returning to his seat once he finished accessing a reinforcing activity or not returning to his seat after transitioning in the school building. Touching of other people's hair was defined as Matthew touching, flicking or blowing other people's hair without their permission and in a way that was inappropriate in a school setting.

Initially, the behaviour contract was introduced for out-of-seat behaviour only. The task specified on the contract was to have 100% in-seat behaviour. The reward was having access to the computer for ten minutes at home once the parent verified that the criteria on the behaviour contract had been achieved.

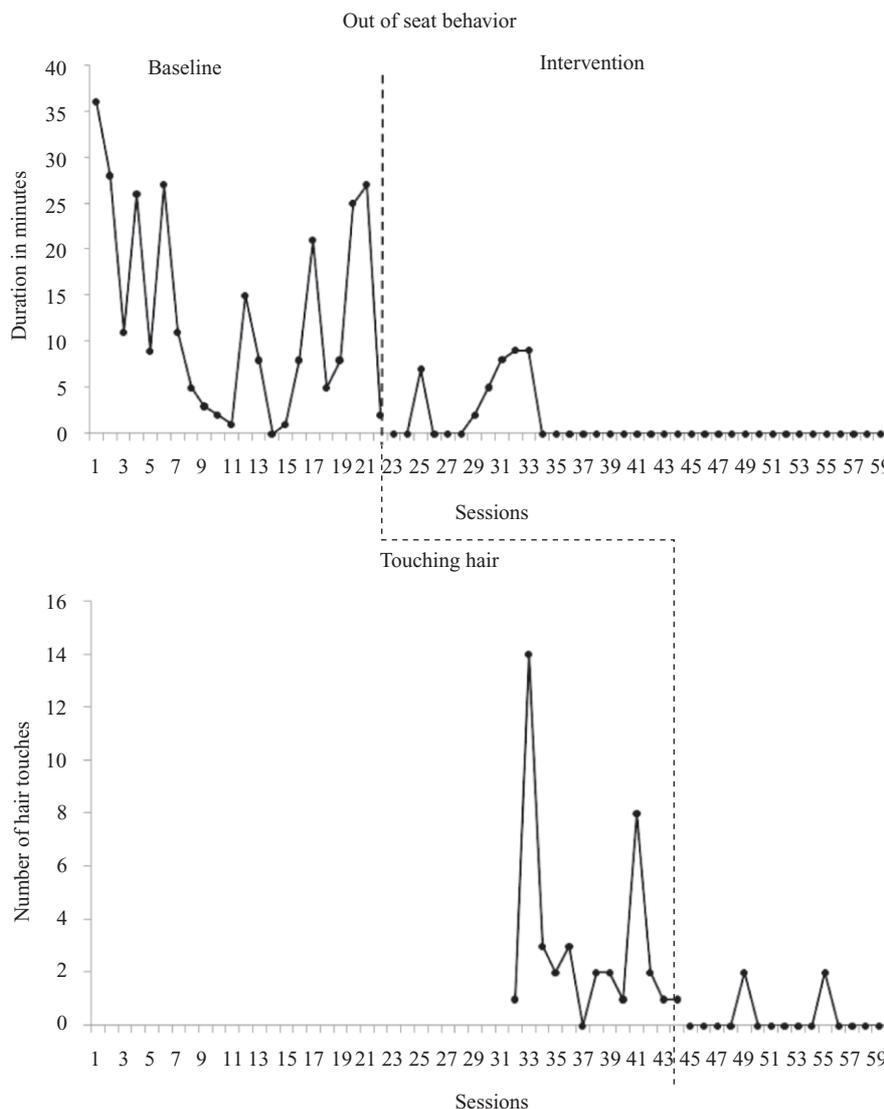
A traffic light system was used to indicate how well Matthew had performed the task. He received a green sticker if he had 100% in-seat behaviour all morning, and an orange sticker if he had out-of-seat behaviour for less than ten minutes. If he had more than ten minutes of out-of-seat behaviour he received a red sticker. The stickers were placed under each day on the contract. The contract stated that he was to receive his reward if he earned green or orange stickers.

Another reward was embedded in the contract which was delivered at school. The contract stated Matthew would receive a surprise if he had five green stickers for a week, which meant 100% in-seat behaviour throughout the week. The surprise was a small novel preferred toy which the participant could take home.

Once out-of-seat behaviour decreased to zero throughout week, the contract was extended to include inappropriate touching of other people's hair. As the expectation increased, the reward concurrently increased to 15 minutes access to the computer at home.

The same traffic light system was used as before to indicate how well Matthew performed the task. He received a green sticker if he had 100% in-seat behaviour and without touching other people's hair for the entire school day. He received an orange sticker if he had less than ten minutes of out-of-seat and less than five occurrences of touching hair. If he had

Figure 4: Duration of Matthew's out-of-seat behaviour and occurrences of touching hair



more than ten minutes of out-of-seat behaviour and/or more than five occurrences of hair touching he received a red sticker.

Figure 4 shows the results of the study. Data for out-of-seat behaviour during baseline ranged from zero to 36 minutes with a mean of 13 minutes per session (each day that included teaching time was defined as a session). During the intervention, data ranged from zero to nine minutes with a mean of less than one minute. Once Matthew was consistently in-seat for 100% of the time the contract was altered to include hair-touching.

During baseline hair-touching ranged from 0 to 14 occurrences with a mean of three occurrences per day. Once the school-to-home behaviour contract was introduced hair touching decreased and reduced to zero occurrences. Data ranged from zero to two occurrences of hair-touching with a mean of 0.28 occurrences per day.

The results were educationally significant because the decrease in the target behaviours meant that there was more

time for Matthew to learn in the classroom each day. Due to the success of the behaviour contract we were ready to re-integrate him into a mainstream setting again and this has been successful to date. The school-to-home behaviour contract became part of the mainstream placement and the rules and expectations remained the same as at The Jigsaw CABAS® School.

Case study 4: Justin

Justin was a 13-year-old boy with a diagnosis of ASD. His behaviour was very good in the school setting, but he demonstrated assaultive and destructive behaviours in the home setting as well as verbal aggression towards family members. In this case the behaviour contract was developed with a home-to-school contingency. The contract was completed daily by a parent at home and the reward was delivered daily at school contingent on the completion of the task.

Justin's contract contained all of the elements necessary for a successful behaviour contract described previously. It had an additional component involving his 16-year-old brother. This component was intended to increase co-operation between

the brothers (rather than constantly competing with each other). Contingent on earning five consecutive ticks on the contract Justin and his brother received an extra half an hour on the Wii®. It was in the interest of both Justin and his brother that Justin received his ticks because this was the only way they could both have access to this preferred activity.

If Justin did not complete the task (in other words, if he was assaultive, destructive or verbally aggressive) he received a cross on his chart. Subsequently he received an explanation that the next day a new chart would be implemented, so he could again begin earning five consecutive ticks.

The contract was successful in reducing assaultive and destructive behaviour at home as well as his verbal aggression. Because the behaviour targeted was demonstrated exclusively in the home setting rather than at school, only anecdotal data were used to determine the effectiveness of the procedure. His parents made the following comment:

'The contract has worked well with a few blips, mostly due to interactions with [brother's name] who was going through GCSEs at the time and was therefore stressed himself. The reason we initiated the idea was because Justin was being very negative and oppositional in his everyday behaviour at home. He was being a normal stroppy 13-year-old, but with a normal teenager you can remonstrate, give sanctions and even reason with them. With Justin none of that works. Hence the positive reinforcement method, using school as the provider of rewards.'

Discussion and future implications

Of course, there are limitations to our work as only case studies have been presented herein. Conclusions can only be inferred from our results instead of proven. A sounder experimental design would need to be used to demonstrate clearly the effectiveness of the behaviour contract, but repeated results can also add to the evidence of their effectiveness. Despite the lack of experimental control, the results of each of these case studies do demonstrate a reduction in antisocial behaviour for each of these children. It was felt important to share these results as the behaviour contract can easily be included in any setting, not necessarily a specialist setting that provides applied behaviour analysis. The components required in a behaviour contract do not necessarily demand highly specialised training in the field of behaviour analysis. The key lies in the consistency of how the procedure is carried out, the reliability of the measurement used and the ability of the staff/parents working with the individual to remain contingent. We also saw an improvement in

children's behaviour when a home-school link was formed and we felt that this information was important to share too. We would like to see other professionals in the field use the behaviour contract to address antisocial behaviour and we would like to encourage more links across the settings of the child who is exhibiting behaviour that requires addressing.

In order for the home component of the behaviour contract to be effective, some initial parent training may be necessary, but more importantly parent support is paramount. As the contingencies between school and home are intertwined the relationship between the two becomes stronger as they now share goals that are in common.

There are several further advantages of implementing a behaviour contract as an initial component of good instruction. First of all, it is a non-intrusive and positive procedure; it is a proactive, rather than a reactive, procedure for addressing antisocial behaviour. Secondly, the behaviour contract promotes goal-setting and self-management, giving children some control over their lives. It builds motivation, especially if the child is fully included in the setting of goals and the choice of reinforcers. The behaviour contract can be modified and individualised for all pupils. It can also be faded out by increasing the tasks that need to be included until eventually the child is working in the same format as any individual would work – for example, writing a list of 'things to do' or setting a target of writing 500 words for an essay and then taking a ten-minute break.

Furthermore, it can be incorporated into a classroom so that one pupil is following an individualised behaviour management package without there being too many demands placed on the teaching staff to ensure it is followed through consistently. The teacher just needs to do the initial groundwork with the parents working out the appropriate reward for the home setting and ensuring that the consistency is going to occur.

Historically, behaviour contracts have been used only after behaviour has become problematic. Based on the scope of the benefits described in this article we recommend that behaviour contracts should be considered as a preventative tool. In educational communities globally, recent interest has focused on response to intervention initiatives and we suggest behaviour contracts should be used to emphasise response to instruction. In order to do so, schools need to consider planning for parent training, teacher training and professional development, as well as liaising with local and national universities on expanding research in the area of behaviour contracts.

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