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Evidence-based practice in the face of complexity and co-morbidity: A Case Study of an Adolescent with Asperger's Syndrome, anxiety, depression and chronic pain.

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Abstract

Working with clients who present with multiple conditions and co-morbidities, including mental health difficulties, neurodevelopmental disorders and physical health conditions, requires the therapist to go beyond the existing evidence base to make decisions about which specific CBT models and resultant treatment approaches to draw on in therapy. Routine outcome monitoring across a number of parameters, including goal progress, symptom improvement and changes in functioning are core to maintaining accountability through monitoring the ongoing impact of idiosyncratic interventions. To illustrate, the case of a young person (age 17) who presented with mixed anxiety and depression in the context of autism spectrum disorder (ASD) and chronic pain will be presented. In addition to evidence based adaptations to CBT for clients with ASDs, the therapist selected a cognitive model of low self-esteem as a means of collaboratively conceptualising the client's difficulties. Routine outcome measurement demonstrated the effectiveness of the intervention.

Keywords

CBT; Autism spectrum disorder; case conceptualisation

Introduction

Good clinical practice dictates that decisions about treatment should be informed by the existing evidence base. The National Institute for Health and Care Excellence (NICE) guidelines summarise the existing evidence and set standards for high quality healthcare provision on the basis of a synthesis of the best available evidence at the time of publication. NICE guidelines exist for a range of clinical diagnoses in mental health, and increasingly, guidelines specific to mental illness in children and adolescents are being published (for example, the publication of guidelines on social phobia and conduct disorder in 2013).

However, when faced with multiple co-morbidities, including physical health issues, neurodevelopmental issues, and mental illness, the therapist has to extrapolate from a variety of sources of guidance and evidence to select the best course of treatment. Much of the existing evidence is from treatment trials in which clients with complex co-morbid health issues are excluded; for example, the randomised control trial which investigated the use of antidepressant medication and standard clinical care with and without the addition of Cognitive Behaviour Therapy (CBT), undertaken by Goodyer et al. (2008) excluded adolescents with significant learning disabilities (which may include neurodevelopmental conditions such as autism spectrum disorders) and potential contraindications for antidepressant medication (which may include physical health conditions). Thus, decisions about evidence based practice can be as much an art as a clinical science (Saunders, 2000), and includes a consideration of the evidence base, clinical expertise and client preferences (Spring, 2007).

The core symptoms and features of Autism Spectrum Disorder (ASD) typically include (but are not limited to) stereotyped behaviours and interests, sensory sensitivities, concrete thinking, cognitive rigidity and inflexibility, weak central coherence, poor emotional literacy, theory of mind deficits, and social communication deficits (Baron-Cohen, Leslie, & Frith, 1985; Donoghue, Stallard, & Kucia, 2011;

Leyfer et al., 2006; Ozonoff, Pennington, & Rogers, 1991; Simonoff et al., 2008). It is assumed that such features may impact on the efficacy of standard talking treatments like CBT (Lickel, MacLean, Blakeley-Smith, & Hepburn, 2012), which has generated debate about how best to treat co-morbid psychiatric disorders occurring in this population (Chalfant, Rapee, & Carroll, 2007). This is particularly relevant to establish, given that mood and anxiety disorders are very common in this population, possibly as a result of the vulnerability posed by and effects of the same core features and symptoms (Reaven, 2009); an estimated 70% of participants in a population derived sample of young people with ASD had one comorbid psychiatric disorder and 41% had two or more comorbid psychiatric disorders (Simonoff et al., 2008).

Therefore, NICE (2013) published guidelines on the management and support of children and young people on the autism spectrum recommending that children and young people with an ASD and a co-morbid anxiety disorder are offered CBT, providing they have the cognitive and verbal ability to utilise it. Specific adaptations to CBT for this client group are advocated, including incorporating emotion recognition training, using visual aids, written information and worksheets, taking a concrete and structured approach, simplifying cognitive activities as required, drawing on the child or young person's special interests where possible, and having parents or carers assist in implementing and supporting the therapy. The guidance about treatments for co-existing depression is less specific, referring to the NICE (2005) guideline on the identification and management of depression in children and young people, which recommends that a specific psychological therapy (such as CBT) is offered as a first line intervention for moderate to severe depression, with adjunctive antidepressant medication trialled if there has been no response to therapy after 4 to 6 sessions. However, it indicates that this guidance is not specifically intended for clients with other mental health co-morbidities (such as anxiety) or physical health co-morbidities. No specific mention is made of clients with ASD within this guidance.

The NICE guidance (2013) is based on a number of studies which have utilised CBT with children and young people with ASD in individual or group treatment settings. A number of recent systematic reviews also seek to synthesise the established evidence base. Lounds Taylor et al. (2012) published a systematic review of interventions of adolescents and young adults with ASD. They concluded that few studies have been conducted and those that exist are of poor quality, resulting in limited available evidence about the efficacy of specific treatment approaches, particularly at the time of transition from adolescence to adulthood. More targeted reviews of CBT for anxiety in children and young people with ASD (Lang, Register, Lauderdale, Ashbaugh, & Haring, 2010; Soussana, Sunyer, Pry, & Baghdadi, 2012; Sukhodolsky, Bloch, Panza, & Reichow, 2013) have concluded that CBT appears to be an effective treatment for this client group, although the evidence is limited and adaptations to standardised CBT are required.

Adaptations to standardised CBT are highlighted in the existing literature. For example, Wood et al. (2009) undertook a randomized, controlled trial in which 40 children (aged 7 to 11) with ASD and co-morbid anxiety were randomly assigned to 16 sessions of individual CBT or to a waiting list control condition. They highlight the problems faced when working with children with ASD, including difficulties with generalising skills learned in therapy to settings where they are needed, poor social skills, adaptive skill deficits, and circumscribed interests and stereotypies. Therefore, they made a number of adaptations and expansions to a standard CBT programme, by introducing modules on friendship skills, self-help skills and a contingency management programme for behavioural difficulties. Children allocated to CBT showed significantly greater improvement on diagnostic outcome measures and parental reports of child anxiety (although not on self-report), and these gains were maintained at 3 month follow-up. Additionally, authors such as Reaven (2009) and Donoghue et al. (2011) have published guidance on using CBT with this population. Reaven (2009) emphasises the importance of making the material and CBT concepts in therapy more visual and concrete, for example by using

written worksheets, using drawing or other creative methods, and focusing on strengths and talents. Reaven also suggests ensuring that multiple opportunities are available for repetition and practice, and that modelling (for example, video modelling) is utilised for hard to teach concepts. Donoghue et al attempt to capture the process of therapy within the framework of the acronym 'PRECISE' (p. 92), which emphasises partnership working, adapted for the developmental level, within an empathic therapeutic relationship in which enjoyment, creativity and investigation are encouraged in order to facilitate self-discovery and a sense of self-efficacy. Specific adaptations suggested for individuals with ASD are wide ranging, and include (1) clarifying the expectations for each session, thus limiting the potential confusion which may arise from the social interaction of the therapeutic encounter, (2) being more directive and specific than one may otherwise be, (3) checking that information has been understood through use of verbal and written summaries, (4) using visual and concrete ways of representing emotional material like diagrammatic conceptualisations, (5) creatively incorporating the individual's interests and experiences through use of media, for example, and (6) keeping language as concrete and literal as possible.

Working therapeutically with clients with ASD also presents difficulties with regard to routine outcome measurement as a result of the core features of the neurodevelopmental disorder. Firstly, outcome measures, if not specifically designed for use with the ASD population, may simply capture the core features of the ASD as a result of diagnostic overlap; for example, between compulsive behaviour in OCD and ritualistic behaviour in ASD (van Steensel, Bogels, & Perrin, 2011). Secondly, individuals with ASD may find it difficult to complete self-report outcome measures as a result of the core features of their neurodevelopmental disorder, for example, poor emotional literacy may make it difficult to answer questions about how they have been feeling over the past week. However, there is evidence that adults with autism spectrum disorders can use self-report measures to report their own emotions (Berthoz & Hill, 2005).

There is a wider non-ASD specific literature, which examines the utility of CBT for individuals with multiple comorbidities. For example, Ollendick, Jarrett, Grills-Taquechel, Hovey, and Wolff (2008) reviewed comorbidity as a predictor and moderator of treatment outcome in young people with anxiety, affective, attention deficit hyperactivity disorder, and conduct disorders, found that comorbidity did not appear to affect treatment outcomes, and noted that comorbidity is the rule, rather than the exception, in treated samples.

Thus, when presented with multiple co-morbidities, the challenge for the therapist is to select a model for conceptualisation to inform treatment which encompasses the range of presenting difficulties, whilst also being understandable and acceptable to the client as a means of making sense of their difficulties. With multiple co-morbidities, a potential avenue for conceptualisation and treatment is utilising a transdiagnostic model. The cognitive model of self-esteem (Fennell, 1997) includes both a depression and an anxiety maintenance cycle. The model posits that negative core self-beliefs, arising from temperament and experience, are central to low self-esteem. Resultant escape clauses (dysfunctional assumptions) lead to the development of behavioural strategies designed to prevent the negative beliefs from being activated. However, these assumptions and strategies are fragile and difficult to sustain and therefore, when violated, result in increased negative thinking, lowered mood, and inevitably lead to confirmation of the negative core self-belief (depression trajectory). When a situation arises in which there is a risk that the assumptions may not hold true or the compensatory strategies may not be effective, an anxious trajectory results, in which the anxious patterns of thinking, in addition to driving affective and physiological anxiety, triggers the use of safety behaviours including escape from or avoidance of the situation which poses the threat to the assumptions, or the use of precautionary strategies within that situation. Such safety behaviours, paradoxically, tend to have the effect of ultimately resulting in the confirmation of the negative core belief.

The overall treatment aims which result from the cognitive model of self-esteem are to weaken negative core self-beliefs and to develop a more balanced alternative, fostering self-acceptance. Fennell summarises key interventions to address maintenance factors, including:

- 1) Understanding the problem.
- 2) Modifying the perceptual bias by directing attention towards positive qualities and assets, keeping daily diaries of examples of positive qualities and considering evidence for and against the old belief.
- 3) Modifying the interpretative bias by questioning negative automatic thoughts about the self, testing negative predictions through behavioural experiments, and addressing all-or-nothing thinking through continuum work.

A case study of a 27 year old female, referred for CBT for depression and anxiety, illustrates the success of a 12 session treatment over 6 months, based on this model and treatment approach (McManus, Waite, & Shafran, 2009); post-treatment, the client no longer met the diagnostic thresholds for any psychiatric disorder and showed reliable and clinically significant change on measures of depression, anxiety and self-esteem.

The following case study aims to exemplify a number of treatment-relevant issues in the context of multiple, complex co-morbid physical, neurodevelopmental and psychiatric issues in children and young people. Primarily, this case study aims to provide an illustration of a conceptualisation-informed treatment approach, based on a transdiagnostic low self-esteem model, which was both understandable and acceptable to the client, and informed the treatment interventions undertaken by the therapist, whilst also capturing the complexity of the presenting problems. In addition, this case study aims to document the adaptations made to a standard CBT approach, and to provide a discussion of the utility of routine outcome measurement in the face of complexity.

Case History and Presenting Problems

Lesley (pseudonym) is a 17 year old girl. She has experienced chronic pain in her limbs since the age of 10. This has continued to severely restrict her mobility throughout adolescence, resulting in significant periods of time using a wheelchair. She is the youngest of 3 children, and as her siblings are at least a decade older than her, she is the only child still residing at home with her mother and step-father. Her biological father lives nearby and Lesley continues see him often.

Lesley has a long history of having difficulties in maintaining and sustaining relationships with peers, and of preferring her own company to that of others. She has always appeared to struggle to regulate her own emotions and to make sense of her emotions and those of other people.

Lesley was referred to Child and Adolescent Mental Health Services (CAMHS) at the age of 15 due to concerns about low mood and withdrawal. Whilst waiting to be assessed by CAMHS, her mental state deteriorated significantly in the context of significant bullying by peers at school, and her distress and risk increased, with increasing reported suicidal ideation and self-harm by cutting. Lesley was also becoming more aggressive towards family members. Shortly after the initial assessment at CAMHS, Lesley's escalating risk necessitated an admission to an Adolescent Inpatient Unit for the purposes of safe-keeping and further assessment. She remained on the unit for several months, where she attended therapy groups, including a CBT group, and was offered individual time with a Clinical Psychologist. The extended assessment over the course of the admission, and a subsequent formal diagnostic process which included the use of the Autism Diagnostic Observation Schedule (Lord, Rutter, DiLavore, & Risi, 2001) and a parental interview, resulted in a diagnosis of Asperger's Syndrome using the Diagnostic and Statistical Manual of Mental Disorders (4th edition) criteria (APA, 2000), which would be classified as 'autism spectrum disorder' in the 5th edition (APA, 2013).

The core features and symptoms of Lesley's ASD which are most apparent are sensory sensitivities (to noise, colours and textures), concrete thinking (tending to take things literally), cognitive rigidity and inflexibility, weak central coherence (tending to focus on details but finding it difficult to see the whole picture), and difficulties with emotional recognition and regulation. Intellectually, Lesley is significantly above average. Prior to developing co-morbid mental health problems, Lesley's adaptive functioning was good, although she had always found social relationships difficult to manage.

On discharge from the unit, Lesley felt unable to return to school due to extreme anxiety about social interaction with peers (both realistic and catastrophic). She was offered further outpatient sessions by a Clinical Psychologist, but struggled to engage in these. She continued to be monitored by a Psychiatrist, who prescribed anti-depressant medication, with limited effect. Possibly as a result of her lack of engagement in peers and struggle to function occupationally, Lesley's mood continued to decline.

Having accessed home schooling and completed her GCSEs (General Certificate of Secondary Education examinations), Lesley requested further CBT sessions in advance of starting college. At the assessment, she described cognitive, affective, behavioural and physiological symptoms consistent with depression and mixed anxiety (see table 1).

[INSERT TABLE 1 HERE]

Baseline measurements were taken using the Revised Children's Anxiety and Depression Scale – Self-report version or RCADS (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000). This measure was selected on the basis of a systematic review of the properties of psychometric measures in children with

ASD (Wigham & McConachie, 2014) which concluded that the RCADS was robust in its measurement properties, although the validity of the use of such tools is yet to be established in the assessment of interventions for children with ASD. The RCADS is a 47 item measure of anxiety and depression in children and young people. It is designed for use with 8 to 18 year olds, with parent report and self-report versions. It asks respondents to indicate, on a 0 to 3 scale, how true each item is regarding their usual feelings. It is composed of six subscales: depression, panic, generalised anxiety, separation anxiety, obsessions/compulsions, and social anxiety. A total anxiety score is generated from summing the 5 anxiety subscales, and a total anxiety and depression score from summing all 6 subscales. The RCADS has shown favourable psychometric properties (Chorpita, Moffitt, & Gray, 2005), and normative data is available. Reliable change on the RCADS T scores can be considered to be at least 5 points, assuming a within scale reliability Cronbach's alpha of 0.96 (Esbjörn, Sømhovd, Turnstedt, & Reinholdt-Dunne, 2012). Clinically significant change will be considered to be greater than 2 standard deviations, moving the client to within 2 standard deviations of the normative sample mean, and a greater likelihood of the client being in the normative distribution than a clinical distribution after intervention (Jacobson & Truax, 1991). At assessment, Lesley scored in the clinical range for depression (T score of 85), overall anxiety (T score of 76) and across all the anxiety subscales (panic 73, generalised anxiety 68, obsessions/compulsions 78, social anxiety 62, separation anxiety 73).

Lesley's goals for therapy were to not feel so sad all the time, to feel better about herself, and to not isolate herself and to talk to people more openly. Although, ideally, these goals would have been further refined to make them more specific, measurable, achievable, realistic and time-limited (SMART), Lesley struggled to think about how to refine them further (perhaps due to cognitive inflexibility), and for the sake of maintaining engagement, these goals were agreed to.

Case Conceptualisation

Given (1) the maintaining factors from the anxiety trajectory and the depression trajectory apparently interacting with one another, (2) a core sense of worthlessness, and (3) Lesley's ASD, it proved difficult to find a specific evidence-based conceptualisation model for children and young people that adequately captured this complexity. Lesley was very keen to focus on both the anxiety and the low mood problems, as she saw them as very much interrelated; to her, it seemed to be a false dichotomy to separate them and to focus initially either mood or anxiety as the primary problem, and perhaps as a result of the core features of her ASD, such as cognitive rigidity and all-or-nothing thinking, she was unable to entertain the idea that one problem could be seen as primary or could be an initial treatment target.

Therefore, the general maintenance conceptualisation approach of cognitions triggering affect, behaviour and physiological symptoms, which further compound one another was used, and an idiosyncratic conceptualisation mapped out with Lesley (see figure 1). This was loosely informed by Fennell (1997) cognitive behavioural model of low self-esteem, which has the advantages of being transdiagnostic and including maintenance factors for both anxiety and depression components of the problem. Commensurate with her emotional recognition difficulties, Lesley appeared to find it most challenging to identify and label the affective components of cycles; using a visual aid with colourful, expressive cartoon faces and identifier labels for her to select from seemed to aid her ability to name her emotional experience, as did starting with the other components of the cycle (e.g. naming behaviours and physiological symptoms first, followed by cognitions, and then exploring the affective experience components).

[INSERT FIGURES 1 & 2 HERE]

Over the course of therapy, a more complex longitudinal conceptualisation (based on the cognitive model of low self-esteem) was collaboratively developed in order to further Lesley's understanding of what had contributed to the difficulties she was experiencing (see figure 2), thus developing her self-compassion and insight. This longitudinal conceptualisation was the result of ongoing work over the duration of therapy; Lesley found it very useful to map out and continue to update and develop this shared understanding of her difficulties and how they had arisen, which has resulted in a much more comprehensive and detailed diagram than may be realistic and helpful for most young people. For Lesley, this process appeared to help her to recognise abstract themes through the use of a concrete and visual format. Thus, she was able to make links that she had not previously made by mapping complex cognitive and emotional information out; it appeared that this was a means of overcoming (or at least, compensating for) her weak central coherence as a result of her ASD.

Treatment

In total, Lesley was seen for 20 weekly CBT sessions. Reviews were held at sessions 6, 12, and 20, which included family members and the team's Psychiatrist. To inform the treatment approach, a cognitive behavioural treatment for low self-esteem was used as a predominant model (Fennell, 1998; McManus et al., 2009; Shirk, Burwell, & Harter, 2003; Waite, McManus, & Shafran, 2012), with adaptations made for the co-morbid ASD (Attwood & Scarpa, 2013; Donoghue et al., 2011; NICE, 2013; Reaven, 2009).

To begin with, given how low in mood Lesley was, recognising patterns of negative thoughts and unhelpful behaviours seemed important. Several sessions (and homework assignments) were spent gathering information about the content of Lesley's negative thoughts, and labelling the patterns that negative thoughts can fall into (for example, mind-reading and setting yourself up to fail). Once Lesley had grasped this, evidence for and against specific negative thoughts and worries was considered.

These early sessions involved a considerable amount of repetition at each session at Lesley's request. What Lesley reflected on during this process was how important catching her train of negative thoughts early is in order to help her to think logically. She also found it helpful to check her perspective with other people (initially in therapy sessions, and then with her parents).

In parallel to the negative thought and mood work, time was also spent on developing a range of anxiety management strategies. A number of anxiety management strategies were introduced, and Lesley favoured a sensory box (containing items with different smells and textures), breathing calmly, focusing on 3 things she can see, hear, and touch in the environment around her, positive self-talk (e.g. telling herself 'I'm talented'), bringing to mind her special relaxing place and distraction. Although there is no empirical evidence around the use of a sensory box, over-responsivity to sensory stimulation has been found to be related to autistic traits in a nonclinical sample of college students (Liss, Mailloux, & Erchull, 2008) and it is believed that sensory issues in children with ASD can contribute to emotional dysregulation (Attwood & Scarpa, 2013).

At therapy session 8, Lesley was facing the impending challenge of commencing her college course. In preparation for this, time was spent building social skills, including discussing and practising (through role play) how to start conversations and how to keep conversations going, informed by the approach described by Wood et al. (2009). Lesley was able to generate a list of helpful strategies to employ in these situations and to practice using these outside of sessions. This work was targeted at remediating for some of the social challenges Lesley faced as a result of her ASD, including her difficulties with reading social cues and her perspective-taking deficits (Meyer & Minshew, 2002).

Lesley was also able to undertake a range of behavioural experiments to explore the impact of changing her behaviours on the identified maintenance cycles (figure 1). For example, she experimented with

responding to friends' messages, even when she was feeling low, rather than ignoring them, and discovered that this led to an improvement in mood, as well as a more positive response from them than she had expected, thus enabling reflection on the validity of her negative thoughts about other people and their view of her. Lesley appeared to find the concrete evidence gathered from such experiments very much more convincing than realisations reached via more abstract Socratic dialogue.

Towards the end of therapy (sessions 13 onwards), sessions were dedicated to reviewing the experiences Lesley has had (including reviewing and adding to a timeline that had been commenced during the assessment stages of therapy). Reviewing these, links were made to the beliefs Lesley had developed about herself, others and the world, and the rules that she had adopted over time to live within the parameters of the negative beliefs (see figure 2). From session 16, the focus shifted onto developing alternative beliefs that Lesley wanted to work towards, collecting evidence for these beliefs using positive data logs and positive qualities surveys (Fennell, 1998). Regular ratings of her conviction in the old beliefs and the new alternative beliefs throughout these sessions evidenced gradual reduction in her conviction in the negative beliefs, complemented by an increase in her conviction in the positive beliefs.

Lesley was prescribed antidepressant medication (SSRI) approximately 10 weeks prior to therapy commencing, and this continued at a stable dose throughout the course of therapy.

Treatment Outcome

At the beginning of therapy, Lesley had been unable to attend school for a year, and was having little contact with peers. By the end of therapy, she was attending a college course in a neighbouring town, managing the journey on the train, and had made a number of friends. She was interacting with friends

outside of college. Her relationships with her family members had improved. She seemed objectively much brighter and more confident.

At the assessment session (baseline/pre-CBT) and at review points in therapy, the RCADS was completed (see figure 3). The scores are evidence of a reliable change and clinically significant reduction in anxiety and depression over the course of therapy, despite the initial increase between the pre-CBT measure and session 6, which may have been the result of Lesley becoming more aware of her difficulties (due to tasks such as recognising negative thoughts) and also of challenging herself to overcome avoidance, thus exposing herself to discomfort and anxiety.

[INSERT FIGURES 3 and 4 HERE]

Overall, there was a considerable decrease in depression scores over the course of therapy (see figure 4). This decrease appeared to be a reliable and clinically significant change. Even by the end of therapy, as the horizontal line indicates, for her age and gender, her RCADS depression subscale score was only just below the clinical range. The items on which she continued to score more highly were those related to physiology, and may reflect a limitation of the RCADS depression subscale in young people with co-morbid physical health issues. Furthermore, it would be reasonable to expect that a degree of functional impairment would remain, which reflects the core ASD symptoms (Ozsivadjian, Magiat, & Howlin, 2011).

Overall, on the anxiety subscale of the RCADS, there was a reliable and clinically significant change. This was also evident on the panic subscale, with scores on the separation anxiety subscale and the social phobia subscale showing a reliable change and almost reaching clinical significance. However, there was little change on the obsessions/compulsions subscale, which is likely to reflect the

obsessionality component and or the ritualistic behaviour often evident as part of the core symptoms of the autism spectrum, which illustrates a limitation of using standardised measures with this population. There was also relatively little change on the generalised anxiety subscale, although the score on this subscale was within the normal range by the end of treatment.

Goal progress, rated at every session on a 0 to 10 scale (Law, 2012) where 0 means no progress has been made and 10 means a goal has been fully reached (see figure 5) showed that there was gradual, consistent progress towards all 3 goals over the course of therapy, with a score of 7 reached on all goals (including 'not feeling sad all the time') by session 20.

[INSERT FIGURE 5 HERE]

Lesley found it difficult to complete the psychometric measures at first, but also really liked the way in which regular completion of these measures enabled a visual chart of her progress. This tangible evidence of progress appeared to help her to move away from all-or-nothing thinking about having mental health difficulties (i.e. 'Either I have depression or anxiety, or I don't') to thinking more about how she was coping and functioning within the context of the multiple challenges she faced. It also appeared to enable her to feel hopeful, and she was interested to note that improvements in her functioning did not always correspond with goal progress (for example, early in therapy, when she began to challenge herself to enter anxiety provoking situations more frequently, thus progressing towards her goals, her anxiety symptomatology increased). This highlights the importance of tracking progress on different dimensions (for example, in this instance, symptoms, goal progress and functioning).

Discussion

The intervention, based on a low self-esteem conceptualisation model, seems to have had positive effects on Lesley's functioning, goal attainment and symptoms. A major complicating factor was the core symptoms of Lesley's autism spectrum disorder. The particular adaptations made to therapy to accommodate for this included:

- Repetition of material (such as practising catching negative thoughts and looking at the evidence for and against them), gradually encouraging Lesley to practice the skills more independently through a process of scaffolding (Wertsch, 1986). This repetition facilitated generalisation of the skills developed in therapy to different areas of Lesley's life, including college and home (White et al., 2010). The repetition of cognitive restructuring work helped Lesley to develop some degree of cognitive flexibility and to promote generalisation, thus remediating for the cognitive inflexibility inherent in ASD.
- Use of visual prompts (for example, pictures exemplifying the different thinking patterns, which Lesley opted to make into cards and laminate, and pictorial representations of emotions). This was done within each therapy session by mapping out situations and issues using diagrams (broadly separated into thoughts, feelings and behaviour boxes). This seemed to enable Lesley to engage in being a partner within the therapeutic relationship, perhaps by giving a tangible focus for the interpersonal interaction beyond sitting together and talking (Attwood & Scarpa, 2013). This also seemed to appeal to her preference for visual thinking, and therefore, helped her to make links and to see patterns, improving (or at least, adapting for) her weak central coherence and executive function deficits, as well as possibly aiding her ability to convert internal states into speech (Attwood & Scarpa, 2013). Colour pens were used at Lesley's request as she explained that she 'thinks in colours'. Lesley was encouraged to select what colours were used and in what way, and she kept the resultant diagrams and charts in a folder for her future reference.

- Incorporating social skills and emotion recognition training as required based on the work of Wood et al. (2009), which aimed to address the social skills and emotion recognition deficits concomitant with ASD. It was important to address the social skills deficits can be compounded by anxiety (White et al., 2010), and potentially increase vulnerability to stigmatisation, embarrassment, harassment or bullying (Lang et al., 2010). It was also important to undertake emotion recognition and skills training to address the limited repertoire of behavioural responses to emotional arousal, characteristic of ASD (Attwood, 2006).

Furthermore, to accommodate for Lesley's sensory sensitivities, the same therapy room was used every session.

A further complicating factor was Lesley's chronic pain, which restricted her activity levels, thus impacting on the extent to which behavioural activation could be utilised as part of the treatment interventions aimed at the depression. Her chronic pain was also the cause of some of her negative thinking, and to some extent, this was realistic, although with careful unpicking, distortions were identified and challenged, and the realistic negative thinking was amenable to problem-solving.

Lesley had previously had CBT input, both in an inpatient context and in the community with little effect. Thus, it may have been expected that she would lack confidence in the potential utility of this treatment approach. Instead of this potentially acting as a barrier to care, it seemed to act as an enabling factor as she had an understanding of CBT and what it required, was very motivated to engage in actively making changes and also hopeful that CBT would work for her when she sought it on this occasion. Motivation and hope that therapy will work, not only on the part of the client but also the therapist, are critical factors in determining the outcome of therapy (Coppock, Owen, Zagarskas, & Schmidt, 2010). Focusing on developing a genuine partnership with Lesley seemed to be crucial to her motivation and sense of hope, as did routine outcome monitoring.

Treatment Implications of the Case

When presented with complexity and co-morbidity, transdiagnostic conceptualisation models and treatment approaches, such as Fennell's (1997, 1998) cognitive model of self-esteem can be of value. To date, this model has not been empirically evaluated on child and adolescent populations, but as this case study illustrates, there may be scope for its successful use in such cases.

With regard to adaptations to make when delivering CBT in the context of ASD, the existing evidence was very useful as a guide, but most of all, asking Lesley on for feedback at the end of every session about what was working for her and what wasn't working was the most informative source. The adaptations which she particularly found useful were having the same therapy room every session, using lots of diagrams and visual cues, including colours in these diagrams, and repetition of material, which are recommendations consistent with the literature (e.g. Donoghue et al., 2011; NICE, 2013; Reaven, 2009). The standard structure of CBT (Beck, 1995) was particularly useful as the agenda-setting process empowered Lesley to be able to ask for what she needed. The structure also seemed to provide a predictable interpersonal interaction, which Lesley reported helped with managing the interpersonal relationship aspect of therapy.

It may be assumed that individuals with autism spectrum disorders find it difficult to complete standardised rating scales about their cognitions and emotions, given their apparent difficulties with making sense of their own and other people's internal states (White, Oswald, Ollendick, & Scahill, 2009). Thus, therapists may be sceptical about using routine outcome measurement tools in this population. It is possible that Lesley simply learned to respond in the desirable direction (that is, to rate herself as having improved at each subsequent administration) on standardised measures such as the RCADS which ask the young person to rate their feelings and cognitions. However, the objective reports

of Lesley's functioning and her own goal attainment ratings, which were behaviourally anchored, suggest that the improvements on the RCADS reflected actual changes in feelings and cognitions, as demonstrated through behavioural change. Thus, it appears that standardised psychometric tools can, at least in some instances, be used to good effect with adolescents with ASD. What is of critical importance is reviewing not only the quantitative scores on these tools, but the qualitative information produced, particularly when presented with multiple complicating factors (physical health issues, neurodevelopmental issues), in order to select measures which are most appropriate and most likely to be sensitive to change, and also to formulate the measured change (or lack of measured change), for example on physiological symptoms which may be markers of both physical and psychiatric conditions. Some dimensions of psychometric measures (for example, symptom tracking of obsessions and compulsions) may be capturing the core features of a neurodevelopmental disorder such as ASD as a result of diagnostic overlap, rather than capturing features of anxiety as a separable entity (van Steensel et al., 2011). The clinician, in collaboration with the young person, could explore such potential obstacles to measuring change in a meaningful way, and select measurement tools that are most likely to be sensitive to measuring the changes which the therapist and young person have agreed on as treatment targets or goals.

Conclusion

When working therapeutically with cases which present with multiple complexities and co-morbidities, the therapist has to make decisions about conceptualisation and resultant intervention on the basis of more than simply the evidence base. In the case presented, clinical expertise and intuition, client preferences, and remaining responsive and flexible throughout the therapy process was crucial, in addition to considering what prior research indicated would be most likely to be effective. Routine outcome monitoring, focused on monitoring the effectiveness of the intervention by tracking goal progress and functioning as well as psychiatric symptoms, is central to the process of evaluating the

effectiveness of an idiosyncratic conceptualisation and intervention. A transdiagnostic model, the cognitive model of self-esteem, can be useful in both the conceptualisation of and the treatment of depression and mixed anxiety, in the context of ASD and complex physical health problems in an adolescent. A number of adaptations to standard CBT practice may be necessary to accommodate for the core features and symptoms of neurodevelopmental disorders.

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Table 1. Symptoms at Assessment

Cognitive	Behavioural	Affective	Physiological
Negative thoughts about self (worthless), future and the world. Catastrophic fears about what other people think of her. Suicidal ideation.	Withdrawal. Self-harm. Verbal aggression towards family members. Rituals (ordering). Not attending school and avoiding contact with peers.	Diminished interest and pleasure in activities. Pervasive low mood. Constant sense of dread (anxiety).	Poor sleep. Lethargy. Fatigue. Restlessness. Agitation and inability to relax.

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List of Figures:

Figure 1 Maintenance formulation collaboratively developed with young person

Figure 2 Longitudinal formulation collaboratively developed with young person

Figure 3 Progress on symptom measure (RCADS)

Figure 4 Progress on depression symptoms (RCADS subscale)

Figure 5 Progress on therapy goals (where 10 = goal fully achieved)

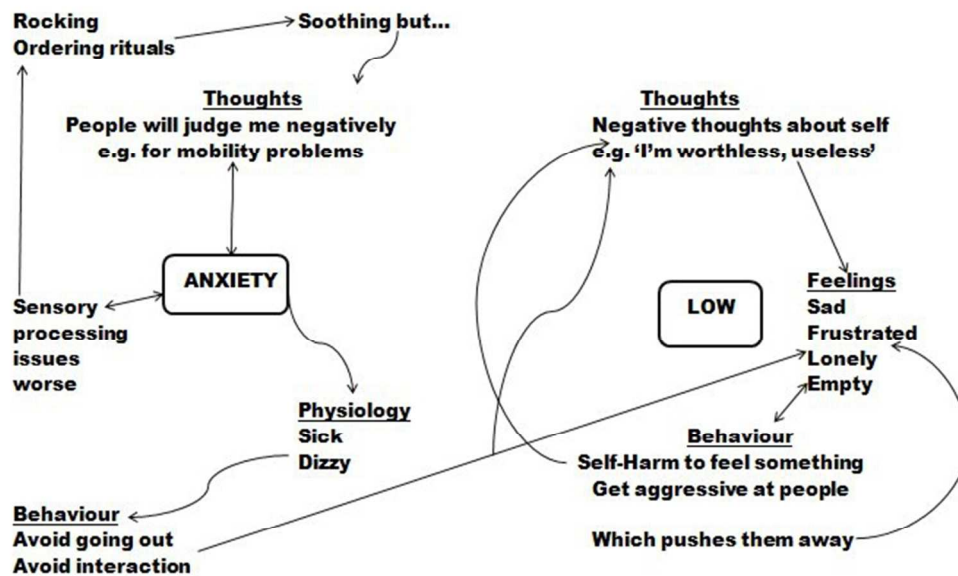
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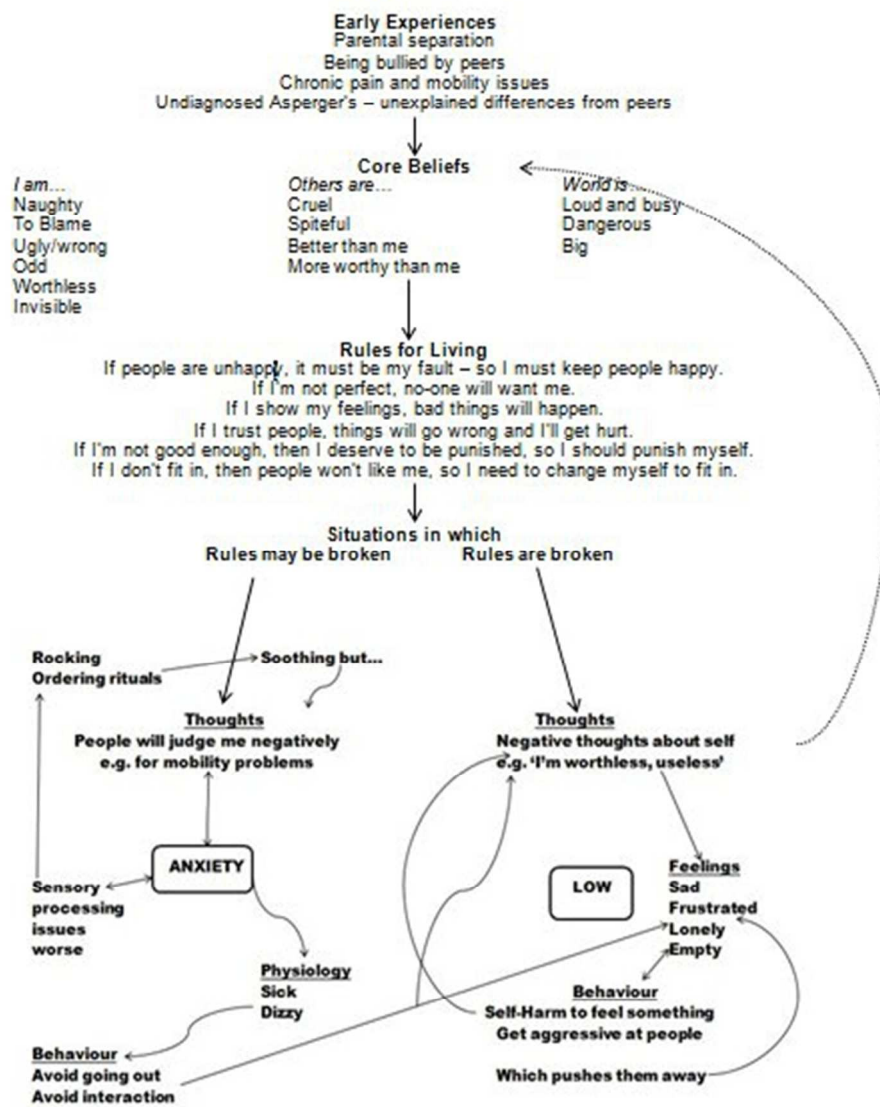
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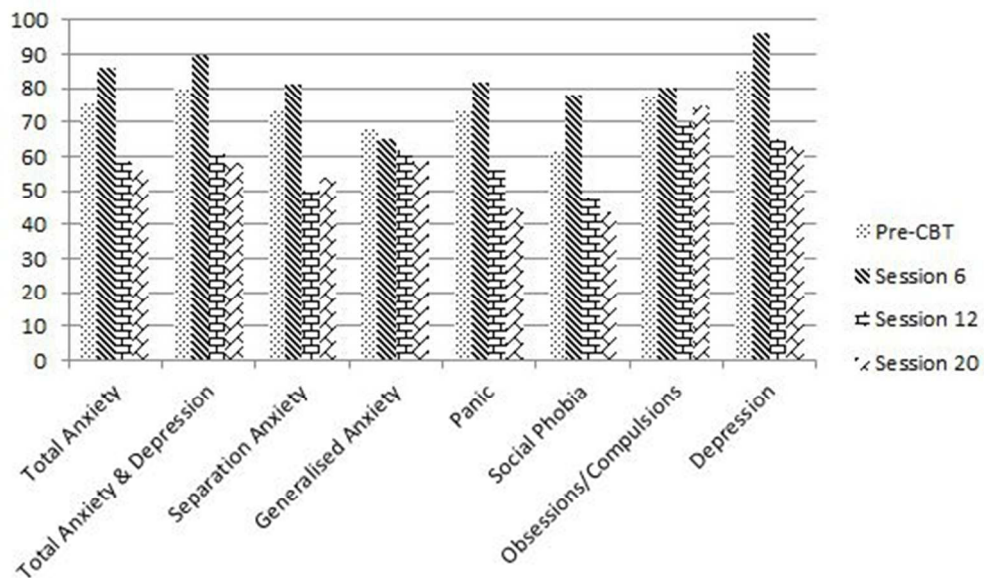


Maintenance formulation collaboratively developed with young person
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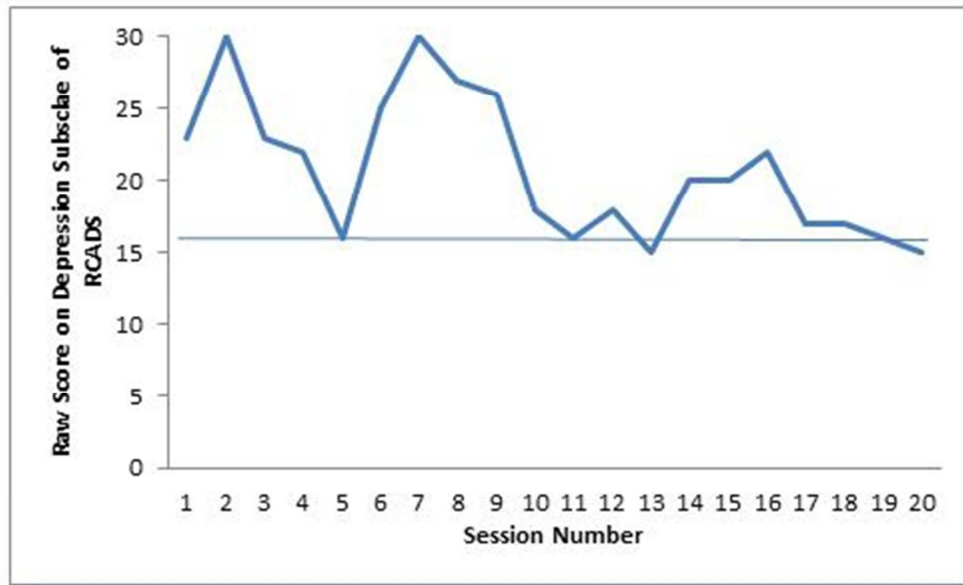


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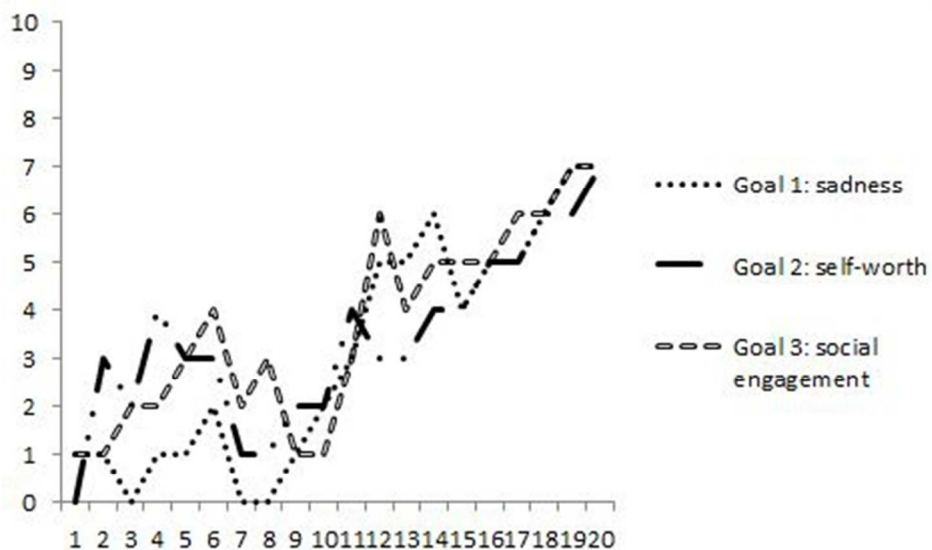
Progress on symptom measure (RCADS)
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Progress on depression symptoms (RCADS subscale)
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Progress on therapy goals (where 10 = goal fully achieved)
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