

INVITED PAPER

Cognitive behaviour therapy (CBT) as a psychological intervention in the treatment of ARFID for children and young people

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Abstract

Avoidant Restrictive Food Intake Disorder (ARFID) is a condition characterised by a disturbance in eating behaviour that leads to a significant negative impact on physical, social and nutritional health. The diagnosis of ARFID relies on a comprehensive, multi-disciplinary assessment to understand the individual's history, physical, social and mental health risk, and any co-occurring mental health difficulties. Consensus guidance suggests that psychological treatment, alongside medical and dietetic input is delivered with consideration of any appropriate adaptations to accommodate developmental stage and/or common co-occurring presentations. This paper has been authored by clinicians working in an out-patient setting for children and adolescents with ARFID, and focuses on the presentation and assessment of ARFID and cognitive behavioural therapy (CBT) approaches that can help children, young people and their families. After an introductory section, the paper is split into four sections: assessment of ARFID; drivers of avoidant restrictive eating behaviour; multi-disciplinary formulation and intervention planning; and treatment. The treatment section provides an overview of the available research on CBT for ARFID, and a brief summary of the broader evidence base for CBT in children and young people with anxiety. Following a review of the evidence base, three case descriptions are provided to illustrate the clinical application of CBT where fear-based avoidance is the main driver. The paper concludes with practice points for clinicians to take forward when working with children and young people with ARFID.

Key learning aims

- (1) To be aware of the international consensus for the use of psychological interventions as a component of ARFID treatment alongside medical and dietetic input.
- (2) To understand that ARFID is characterised as a disturbance of eating behaviour, and as such, psychological intervention should target the drivers of this disturbance to promote behavioural change.
- (3) To gain an overview of the multi-disciplinary team assessment as an important tool to understand the contribution of each of the three drivers proposed to underpin an ARFID presentation.
- (4) To recognise when a CBT approach might be indicated, the current best evidence base for CBT for ARFID and how to adapt CBT to accommodate developmental stage and/or common co-occurring presentations.

Keywords: anxiety disorders; children and adolescents; cognitive behaviour therapy; eating disorders; evidence-based practice; treatment

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Diagnostic criteria and definition of ARFID

Avoidant Restrictive Food Intake Disorder (ARFID) is a diagnostic category included in the fifth revision of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*, (American Psychiatric Association, 2013) and subsequently the eleventh International Classification of Diseases (ICD-11) (World Health Organization, 2019). ARFID as a diagnosis encompasses a heterogeneous group of clinical presentations, but individuals share a primary disturbance in eating behaviour (Bryant-Waugh and Higgins, 2020; Coglán and Otasowie, 2019; Waller, 2019).

Prevalence and demographics

The number of research studies investigating the prevalence of ARFID is growing, with current estimates ranging from 1.5 to 32% in clinical populations and 0.3 to 15.5%, in non-clinical populations (Bourne *et al.*, 2020; Dinkler and Bryant-Waugh, 2021). Most of these studies have been conducted in child and adolescent populations with limited information regarding rates in adult populations. Notable exceptions are estimated rates of 0.3% for 3-month point prevalence in a non-clinical sample of individuals aged 15 and over in Australia (Hay *et al.*, 2017) and 6.3% in an adult clinical population (Murray *et al.*, 2020). The focus of the current paper is on the treatment of ARFID in children, young people and their families, and further reading on adult presentations is offered elsewhere (Todisco, 2022).

The onset of ARFID can be acute and occur at any point in a person's life or be longstanding with onset reported at an early age. Research illustrates a wide range of ages, ethnicities and socio-economic backgrounds in individuals meeting diagnostic criteria for ARFID (Bertrand *et al.*, 2021; Bourne *et al.*, 2020; Cañas *et al.*, 2021; Cerniglia *et al.*, 2020; Dinkler and Bryant-Waugh, 2021). Current studies suggest that in child and adolescent eating disorder populations, those with ARFID are likely to present at a younger age than those with other eating disorders (Forman *et al.*, 2014; Norris *et al.*, 2014). Studies also point to either an equal proportion of males and females diagnosed with ARFID, or a higher proportion of males (Eddy *et al.*, 2015; Hay *et al.*, 2017; Kurz *et al.*, 2015). In addition, children and adolescents presenting with ARFID have often been identified as having co-occurring difficulties including gastrointestinal disorders, nutritional deficiencies, neurodevelopmental disorders, and high levels of anxiety (Chandran *et al.*, 2015; Hadwiger *et al.*, 2019; Inoue *et al.*, 2021; Nicholas *et al.*, 2021).

Aetiology

Although the exact cause of ARFID is unknown, Thomas *et al.* (2017) propose multiple neurobiological processes underlying the three main drivers of behaviour embedded in ARFID diagnostic criteria (i.e. avoidance/restriction related to an apparent lack of interest in eating or food, sensory aspects of food, or concern of aversive consequences from eating; American Psychiatric Association, 2013). These drivers have been described in detail elsewhere (Bryant-Waugh *et al.*, 2021; Thomas *et al.*, 2017), and are referred to below. Any biological vulnerability leading to disturbances in eating behaviour is also proposed to interact with social and psychological processes around food (Micali and Cooper-Vince, 2020; Zickgraf and Elkins, 2018). This bio-psychosocial understanding of ARFID and the underlying drivers requires complete multi-disciplinary assessment that also considers medical, dietetic and social risk (Bourne *et al.*, 2020; Cañas *et al.*, 2021).

Assessment

The assessment of ARFID should be multi-disciplinary to enable risk and drivers of the eating disturbance to be fully understood. The assessment should include a detailed description of

the eating difficulties, exploration of the how the three common drivers may be impacting on the child's presentation, the impact on a child's physical health, nutrition, social and emotional development, and family life (Eddy *et al.*, 2019). A physical assessment will ascertain growth, eating history, and the identification of any medical and nutritional complications resulting from low weight or obesity, and/or malnutrition. This should also include an exploration of any underlying systemic or gastrointestinal disorders that may contribute to the onset or persistence of ARFID (Hudson and Parish, 2020), or may account for the eating disturbance in the form of a missed medical diagnosis. Additionally, the use of a food diary can help identify any nutritional deficiencies (Cawtherley and Conway, 2020). Additional assessments from specialists may sometimes be needed, e.g. swallow evaluation, gastroenterology opinion, and assessment of sensory processing (Eddy *et al.*, 2019).

It is helpful to supplement information gathered through clinical assessment with the use of routinely administered standardised measures, both ARFID-specific (e.g. the questionnaire version of the Pica ARFID and Rumination Disorder Interview: the PARDI-AR-Q; Bryant-Waugh *et al.*, 2019) and measures widely used in mental health services (e.g. Strength and Difficulties Questionnaire (SDQ), Goodman, 2001; and the Revised Children's Anxiety and Depression Scale (RCADS), Chorpita *et al.*, 2000). Full details of measures that can be useful to administer are described in Bryant-Waugh *et al.* (2021), with ARFID-specific measures available at: <https://mccaed.slam.nhs.uk/professionals/resources/featured-resources/>

Drivers of avoidant restrictive eating behaviour

Existing evidence suggests that the three most commonly identified drivers of avoidance or restriction rarely occur in isolation. Typically, two or more may co-occur and interact, and each may be seen as existing on a continuum of severity rather than as distinct categories (Brigham *et al.*, 2018; Bryant-Waugh and Higgins, 2020; Zimmerman and Fisher, 2017).

Avoidance based on sensory characteristics of food

Some individuals may be considered 'super sensors' in that they have a heightened experience of the temperature, texture, taste, appearance or smell of foods. They may really enjoy some strong flavours and specific textures but avoid many others (Keller *et al.*, 2002). Conversely, individuals may show a strong preference for low flavour, colour and single texture foods such as plain pasta, or may only accept a 'beige diet'. Evidence suggests that those with hypersensitivity to sensory input can experience a stronger disgust response and be less likely to tolerate and accept new foods (Harris and Mason, 2017).

Apparent lack of interest in food or eating

This driver may be the result of the individual not experiencing hunger as readily as others and a low appetite, meaning they need to be reminded to eat (Thomas *et al.*, 2017). Others may have low interoceptive awareness of bodily signals such as hunger (Zucker *et al.*, 2019). Habitual under-eating may in turn lead to fewer signals from the body that eating is needed, further reducing appetite. Some may also be easily distracted and find it hard to hold their focus on mealtimes, often seen in those with co-occurring attention deficit hyperactivity disorder (ADHD; Råstam *et al.*, 2013). A child's hunger may be inhibited by over-arousal due to anxiety or sensory overwhelm (Pliner and Loewen, 2002).

Concern about aversive consequences of eating

The 'fear of aversive consequences' driver describes individuals who have marked avoidance or food restriction as a result of a fear concerning aversive consequences of eating, such as choking,

vomiting or gastrointestinal discomfort. This typically presents as an acute onset, rather than chronic, and may have developed following a negative experience. In some individuals there is fear-driven avoidance based on the sensory characteristics of food. A combination of an existing anxious temperament, underlying biological vulnerabilities, lived experience of threat from food, and other psychosocial factors may all contribute to fear-based avoidance of food (Fisher *et al.*, 2014; Nicely *et al.*, 2014; Zucker *et al.*, 2015).

Multi-disciplinary formulation and intervention planning for ARFID

International consensus for the treatment of ARFID recommends a multi-disciplinary approach that delivers psycho-behavioural therapy alongside nutritional and physical health interventions, considering any co-morbidities that might require adaptations (Hay, 2020). The agreed goals for any behaviour change in ARFID are established from reviewing the family's priorities, assessment of impact on daily life, risks, as well as formulation of the main drivers' contribution to the presentation (Bryant-Waugh *et al.*, 2021; Sackett *et al.*, 2002). Hay (2020) identifies the main issue to be addressed is eating behaviour and therefore most often the focus will be on how to bring about changes in this area.

Treatment

Bryant-Waugh *et al.* (2021) outline the different multi-modal interventions that might be indicated following a multi-disciplinary assessment for ARFID, and psychological interventions used to support families in addressing the three common drivers behind an ARFID presentation. It should be noted that the research on psychological interventions for the treatment of ARFID is limited to small-scale research studies, and more vigorous clinical trials are warranted before evidence-based recommendations can be made. Progress in this area has been limited by a number of factors, such as the absence of clear terminology and consistent diagnostic criteria to guide research (Norris *et al.*, 2016; Thomas and Eddy, 2018). Additionally, the heterogeneity in the clinical presentation of those diagnosed with ARFID, which is linked to the different and often co-occurring drivers, has made it difficult to identify a consistent treatment target. Despite these challenges, there is promising evidence for the use of psychological interventions for ARFID, such as behavioural, cognitive behavioural and sensory approaches (Siddall *et al.*, 2020). The focus of this paper is to review the application of CBT specifically, and therefore we will review the current evidence base for CBT for ARFID, with an emphasis on the fear of aversive consequences driver. Due to the limited research evidence in this field, the current review draws together and makes recommendations based on existing reviews, alongside clinical opinion.

Although ARFID is considered a more recent addition to the diagnostic classification systems, the clinical presentation of ARFID is not considered new, and many clinicians have experience of treating ARFID type presentations, diagnosed as a range of other anxiety-related disorders (Bryant-Waugh and Higgins, 2020; Coglán and Otasowie, 2019; Waller, 2019). Therefore, we will first present a brief overview on the broader evidence base for CBT in the treatment of anxiety in children and adolescents, due to the translational application of the CBT methods to target anxiety and its maintenance. We will then outline existing reviews that describe the main disorder-specific protocols for the treatment of ARFID from both an individual and parent-led approach. Finally, as those with a diagnosis of ARFID often have co-occurring autism spectrum condition (ASC), attention deficit hyperactivity disorder (ADHD), or physical health difficulties, we will consider the literature on *CBT adaptations when working with neurodiversity or low weight*. Following a review of the evidence base, three case descriptions are provided to illustrate the clinical application of CBT with children who have

a diagnosis of ARFID, one working individually with a young person, one with parents/carers, and one in the context of neurodevelopmental adaptations.

CBT approaches to treating anxiety in children and adolescents

Across the wider literature on the treatment of anxiety disorders in children and adolescents, CBT is both the most evaluated and widely recommended approach (Creswell *et al.*, 2021; National Institute for Health and Care Excellence, 2014). In a recent Cochrane review, James *et al.* (2020) reported that the available evidence shows CBT to be an effective treatment for anxiety disorders in children and adolescents when compared with being on a waitlist or being in a no-treatment group. However, limitations were identified and there is not enough evidence to suggest that CBT is superior to other treatment approaches, or medication. Evidence seems to suggest that disorder-specific treatments may be associated with better outcomes (Creswell *et al.*, 2014), and that exposure-based approaches are an important component of treatment (Creswell *et al.*, 2021). However, there appears to be some variation across age range with a recent meta-analysis of psychological therapies for anxiety disorders in adolescents not replicating the importance of disorder-specific protocols on treatment response (Baker *et al.*, 2021).

CBT for ARFID

The existing evidence base for CBT for ARFID in children and adolescents is currently guided by case reports, observational, and proof of concept studies (Bryant-Waugh *et al.*, 2021; Bourne *et al.*, 2020; Thomas *et al.*, 2017). See Bourne *et al.* (2020) for a detailed overview of the literature and summary of interventions. There are currently no empirically supported CBT treatments for ARFID in children and adolescents (Bryant-Waugh *et al.*, 2021). However, there is an agreed consensus that treatment should be individualised and guided by a bio-psychosocial formulation that takes into account the driver of the distress and eating disturbance, in collaboration with patient choice (Bryant-Waugh *et al.*, 2021; Coglán and Otasowie, 2019). For children and young people with ARFID, where fear of aversive consequences is the main driver and anxiety is a prominent feature of the presentation, we suggest that a CBT intervention could be applied to address avoidance of food. A cognitive behavioural understanding of this driver is outlined below, followed by a description of the main CBT approaches for ARFID with individuals or parents.

CBT intervention for ARFID when fear-based avoidance is the main driver

The 'fear of aversive consequences' driver describes individuals who have marked avoidance or food restriction as a result of a fear concerning aversive consequences of eating, often linked to a perceived traumatic food-related incident. When conceptualised from a CBT perspective, the individual is avoiding all triggers associated with the incident, in order to prevent a further negative experience from occurring. Whilst this avoidance acts as a temporary relief of anxiety, the avoidance reinforces the behaviour as it prevents any new learning about the trigger/incident from occurring, and the estimation of threat and perceived ability to cope remains the same (Brigham *et al.*, 2018). Any associated 'safety behaviours' used to minimise the anxiety or likelihood of the feared outcome happening then become self-reinforcing and prevent opportunities for disconfirmation of the negative belief, and over-estimation of threat. When targeting CBT interventions to treat the fear-based avoidance, ARFID specific protocols can be drawn upon in addition to the wider literature on CBT for anxiety in children and young people.

CBT-AR (Thomas and Eddy)

One out-patient manualised treatment for ARFID, which has been developed for use with individuals over 10 years of age, is known as CBT-AR and has previously been described in detail (Thomas and Eddy, 2018; Thomas *et al.*, 2018). CBT-AR has shown good acceptability and feasibility in a proof of concept study, although it has not yet been shown to be an efficacious treatment through the use of a randomised control trial (Thomas *et al.*, 2020). The intervention consists of targeted exposure to address the most relevant maintaining mechanisms for the individual, across all three drivers (Brigham *et al.*, 2018). When considering CBT for ARFID, the evidence base for other anxiety and feeding disorders should also be considered (Waller, 2019). However, it is important to consider that the treatments for general anxiety, specific phobia or fear of vomiting do not consider the need to prioritise risk related to physical and nutritional status. A more detailed consideration of adaptations to CBT approaches for those of low weight is provided later in the paper.

Parent-led and family approaches for ARFID

Parent-led CBT approaches involve directly training parents in strategies to help support the child and themselves with managing anxiety, whereas family approaches draw on a variety of systemic techniques to modify behaviour and bring about change. Whilst this paper is primarily focused on CBT approaches, working with children and young people always involves consideration of the whole family and the systems and communities they are part of, and so a brief overview of family approaches is provided alongside the more behavioural parent-led approach.

Parent-led CBT approaches in ARFID

The CBT-AR approach, previously described, incorporates parents into the treatment due to the recognition that parents/carers are an integral part of the process of change. Whilst there are many child-focused treatments for anxiety, there are also a number of parent-led approaches for ARFID that are currently being developed and evaluated and are described below (Breiner *et al.*, 2021).

SPACE-ARFID

Shimshoni *et al.* (2020) describe a parent-led approach, focusing on an adaptation of the Supporting Parenting for Anxious Childhood Emotions (SPACE) program. This is a manualised, parent-led intervention for childhood anxiety and has been shown to be as efficacious as individualised CBT for childhood anxiety disorders (Lebowitz *et al.*, 2020). The SPACE-ARFID program is designed to address family accommodation in the maintenance of ARFID symptoms, and emerging evidence suggests that it is a feasible, acceptable and satisfactory intervention that demonstrates improvement in clinical outcomes (Shimshoni *et al.*, 2020).

Family approaches to treat ARFID

Family approaches in working with children and adolescents with ARFID have also shown promising preliminary outcomes across case studies and pilot randomised control trials (Dahlsgaard and Bodie, 2019; Eckhardt *et al.*, 2019; Sharp *et al.*, 2016; and Shimshoni *et al.*, 2020, as described by Breiner *et al.*, 2021). Lane-Loney *et al.* (2020) describe a family-based protocol for the treatment of ARFID in children and adolescents, across the different drivers. Although this was not a randomised control trial, results showed a promising role for family work in improving range of foods accepted, body weight, anxiety and depression.

Lock *et al.* (2019a) describe a manualised family-based treatment, FBT-ARFID, which is based on the FBT model for the treatment of adolescents with anorexia nervosa (AN) or bulimia nervosa (BN). FBT-ARFID draws on similar techniques used in FBT for eating disorders, such as

externalisation, parental empowerment and efficacy, and targeting eating disturbances through behavioural change. FBT-ARFID has shown promising results in a pilot randomised control trial (Lock *et al.*, 2019b), and across case series (Lock *et al.*, 2019a). However, it should be noted that FBT-ARFID was only applied to children, and not adolescents in these studies. Lock *et al.* (2019a) describe an additional module that can be used for adolescents. A more detailed summary of the scientific literature on FBT-ARFID and practice points can be found in Lock (2021).

Adaptations for neurodiversity and low weight

CBT adaptations for neurodiversity

CBT interventions in ARFID may need a degree of adaptation when working with neurodiversity or very low weight patients. NICE guidelines have outlined adaptations for delivering CBT for anxiety in autistic people that can also apply in ARFID populations. These include emotion recognition training, concrete written and visual information presented in a structured format, parent/carer involvement to support implementation of the intervention, regular breaks to maintain attention, and incorporating special interests in therapy as much as possible (National Institute for Health and Care Excellence, 2013). Further modifications may include practical considerations regarding environmental and sensory aspects, additional support to generalise skills, use of visual aids, consideration of communication/language profile, and in some cases working more at a behavioural level (Attwood and Scarpa, 2013; Moree and Davis, 2010). Specifically, in the context of ARFID, interoceptive awareness training in relation to noticing and responding to hunger cues is likely to be helpful. Some of these adaptations may also be useful when working with ARFID and co-occurring ADHD, e.g. regular breaks to maintain attention and a degree of emotion recognition training focused around managing emotion arousal before and during mealtimes.

CBT adaptations for low weight

When delivering CBT with very low weight patients, there may be some other important considerations for adapting treatment. Literature, primarily discussing AN, has highlighted the impact of starvation on brain function, such as increased cognitive rigidity and weak central coherence, which might interfere with capacity to engage in the cognitive demands of CBT (Howard *et al.*, 2020). Furthermore, a link between low weight and increased anxiety, obsessionality and depression has been found in the wider anxiety literature (Godart *et al.*, 2013; O'Brien and Vincent, 2003; Veale *et al.*, 2012).

The evidence base on adapting CBT for low weight patients is limited. One study, based on a small sample size, showed poorer outcomes for CBT for obsessive compulsive disorder (OCD) in a low weight *vs* healthy weight group (Jassi *et al.*, 2016). The authors proposed a range of adaptations for delivering CBT for OCD in low weight patients, such as prioritising weight restoration, psychoeducation on the effects of starvation and 'accommodating' the OCD in the short term to restore weight and cognitive function. The other main literature base for CBT adaptations in low weight patients is CBT for eating disorders (CBT-ED). This treatment is specifically tailored to patients with eating disorder cognitions, but the broad principles are generalisable, such as prioritising increasing food intake and weight restoration in the first instance via psychoeducation, involving close others for support, and maintaining motivation alongside offering a longer course of sessions (Dalle Grave *et al.*, 2020; Fairburn, 2008). However, it is important to consider the term 'low weight' as relative. Whilst body mass index (BMI) or percentage median BMI can be a helpful tool to ascertain level of risk or physical compromise, it is usually more helpful to consider this in the broader context of an individual's history, pubertal development and weight/growth over their developmental

trajectory, along with physical observations to establish their level of acute starvation or physical compromise. A case-by-case approach is therefore more likely to be helpful in establishing weight status and considerations for offering CBT.

Case illustrations

Three cases will now be provided to illustrate the application of treating ARFID using a CBT approach in a typically developing adolescent with concern about the aversive consequences of eating, from a parent-led approach, and CBT intervention tailored to the individual's neurodevelopmental profile.

Individualised CBT for fear-based restriction and avoidance

Presentation

Zahra was a 14-year-old, Black British female with a recent onset of eating difficulties, referred for assessment and treatment by her General Practitioner. The referral noted a period of acute weight loss and reduced intake as the primary concern. Although she was maintaining her weight at the time of referral, she continued to eat a limited range and small portions. This episode of eating difficulties seemed to be triggered by a period of vomiting, 6 months previous, which lasted for two days.

Impact

The impact of Zahra's ongoing avoidant and selective eating was that she remained underweight and at risk of nutritional deficiency. Her intake of food and fluid was insufficient to meet her nutritional, energy and hydration needs, and eating situations were often associated with significant distress. More broadly, there was a wider impact on the family who made significant accommodations to support her to eat. Zahra was not attending education, as she was unable to eat outside the home. This was having a significant impact on her psychological wellbeing and opportunities for social interaction and development.

Driver(s)

The primary driver for Zahra's eating difficulties was a specific fear of being sick, which had resulted in fear-driven avoidance and restriction of food. Zahra had some sensory-based avoidance due to sensitivity to certain textures, but this was longstanding. Prior to the worries about sickness, the sensory-based avoidance did not have a significant impact on physical health, social functioning or nutrition. However, increased levels of arousal due to worries of being sick were contributing to increased sensory sensitivities in relation to food and eating, as well as reduced appetite and interest.

Intervention

Zahra was offered a CBT intervention, with a focus on *in vivo* exposure, broadly based on Thomas and Eddy's (2018) CBT-AR manual. Sessions were fortnightly, with twelve sessions in total. The initial two sessions were focused on psychoeducation around ARFID, developing a shared formulation with Zahra and her parents, and refining the goals of treatment. Sessions 3 and 4 covered psychoeducation on anxiety, such as the fight or flight response and the process of anxiety habituation. They also covered the role of avoidance and 'safety behaviours' in maintaining anxiety and some psychoeducation on fullness and hunger cues. Session 5 focused on the development of a comprehensive hierarchy of feared foods, situations and

avoidance with associated anxiety ratings. The principles of exposure were explained and linked to the education on anxiety habituation.

Sessions 6 to 10 were focused on *in vivo* exposure tasks to target the avoidance and restriction that was maintaining Zahra's negative predictions about eating and its physical and psychological consequences. In addition to anxiety habituation, the exposure tasks provided the opportunity for inhibitory learning to occur (Craske *et al.*, 2014) and the opportunity for Zahra to be able to disconfirm her negative predictions. There was a strong emphasis on daily homework practice and a review of previous homework at the start of each treatment session. All sessions started with a collaborative agenda, weight and height monitoring, and review of the week, before planning and completing an exposure task. The final session was spent on what Zahra had learnt throughout treatment and its generalisation, how to maintain treatment gains, and preventing future relapses. There was a further appointment offered 1 month following the final session, in order to review progress and troubleshoot any difficulties.

Outcome

As a result of the intervention and skills learnt, Zahra was able to widen her food choices, and the amount eaten at each meal. She managed to regain the lost weight, and this placed her at an expected weight for her age. Importantly for Zahra she was able to resume social eating with her peers and returned to school. Parents described her as returning to her old self and enjoying life more. Zahra was able to reflect on the tools that she had learnt through treatment and was applying them when she faced a new difficulty, not just with regard to eating situations.

Parent-led CBT for concern about aversive consequences of eating

Presentation

Jonathan was a 5-year-old, White British male who was referred to the ARFID Service due to concerns that his diet was restricted to 10 foods, with some brand-specific eating, and food refusal. Jonathan had a background of a cow's milk protein allergy leading to gastroesophageal reflux disease (GORD) in his first year of life. Whilst he had outgrown this allergy and GORD, he was also found to be allergic to peanuts and eggs.

Impact

Jonathan's parents had previously attended a sensory food-based workshop, which had helped Jonathan to touch new foods, but he had still not progressed to trying. He had started a powdered multi-vitamin and mineral supplement to manage nutritional risk. Parents noted that Jonathan was starting to be invited to parties and was unable to join in when foods were presented.

Driver(s)

The driver for Jonathan's eating difficulties was a fear of aversive consequences, thought to have been triggered by his previous GORD and allergies.

Intervention

A parent-led CBT intervention was offered due to Jonathan's age, the level of parental anxiety and because Jonathan was reported to struggle with conversations about food (Creswell and Cartwright-Hatton, 2007). The intervention drew on Creswell and Willetts' (2019) self-help guide for parents and Creswell *et al.*'s (2019) parent-led CBT for child anxiety.

The first treatment session focused on psychoeducation and the development of a shared formulation. Information was provided about ARFID and its three primary drivers, the relationship between anxiety and sensory sensitivities and food neophobia (Farrow and Coulthard, 2012) as well as information about anxiety and breaking the avoidance cycle. During the session we thought about times when Jonathan had previously overcome his anxiety. Parent goals were reviewed and broken down into manageable steps. Parents were encouraged to think between sessions about Jonathan's strengths and to try and find a small task they could encourage him to do to develop his independence.

During the second treatment session parents spoke about how well Jonathan had coped with being given a small independent task and how he had subsequently built on this. The second session introduced the idea of 'tasting times' (a short period of time which would take place two to three times per week, when the child is encouraged to take small steps to try new foods; Siddall, 2020) as well as positive reinforcement strategies. Parents were encouraged to develop a clear and concise reward system that could be applied when encouraging Jonathan to try new foods. Finally, parents were informed about food chaining (selecting new foods that are similar but different in their sensory properties to foods that are currently eaten; Fraker *et al.*, 2007). Between sessions they were encouraged to develop a visual reward chart to go on the wall at home.

During the third session parents spoke about having had some success with Jonathan trying new flavours of crisps, but he was still fearful about other foods making him poorly. A system was introduced so that an adult could check food ingredients for him or that he had a laminated card to keep in his pocket to show an adult before trying a food. Parents were advised to give Jonathan a scrapbook where a picture of any foods he tried was given a smiley, neutral or sad face. Parents were advised to then select a food that had been given a smiley or neutral face for Jonathan to try repeatedly for up to 15 times to see if this food could be consolidated (Wardle *et al.*, 2003).

Outcome

Two follow-up sessions were offered at 1- and 3-month intervals. Parents were encouraged to continue working on Jonathan's general anxiety using self-help anxiety resources, such as a 'worry box'. A visual timetable was introduced so that Jonathan could plan when he would have any new foods. Six months after starting treatment Jonathan had tasted 20 new foods and had introduced four new foods to his diet.

Adapted CBT for ARFID in an autistic young person

Presentation

Ezra was an autistic 17-year-old, White British, transgender male with a longstanding history of low food intake and low body weight but with significant worsening in recent months. Ezra's eating pattern was irregular (often forgetting to eat or not feeling hungry to eat) and he was leaving over half of his portions unfinished. Ezra had previously been attending mainstream education with additional support via an Educational, Health and Care Plan (EHCP). He had stopped attending in recent months on the advice of his medical team due to his very low body weight.

Impact

Ezra's food intake was not meeting his energy requirements and he was at risk of continued weight loss and hospital admission.

Driver(s)

Ezra's reduced intake of only eating half portions, was driven by a combination of low interest in food and eating, and a more recent fear of feeling or being full. This fear appeared triggered by a recent incident where Ezra had felt pressured to eat too much in one go and had been sick. He then became fearful of something bad happening when he ate although he was clear that this was not specific to vomiting, and instead a more generalised fear of something bad and unknown happening that he wouldn't be able to cope with. The low interest in food and eating was likely related to poor interoceptive awareness (difficulty noticing and responding to hunger cues) in the context of autism. Although Ezra also had longstanding sensory sensitivities to food, this was relatively well managed and not a main area of risk. As Ezra dropped his food intake to avoid feeling full, his appetite became further dampened, setting in motion a self-perpetuating cycle of low intake and weight loss.

Intervention

A 10-session adapted CBT intervention was offered, which focused on supporting Ezra to increase his intake via establishing a regular eating pattern and graded exposure to increased portion sizes while learning to tolerate feeling full. In parallel, Ezra continued to see his existing medical team for regular weight and physical health monitoring. The intervention was adapted specifically to Ezra's needs following guidance for adapted CBT for (anxiety in) autism as outlined by NICE guidelines (National Institute for Health and Care Excellence, 2013). This included practical adaptations such as shorter session times (40 minutes), use of visual and structured worksheets, following a clear and predictable structure for sessions, and incorporating a module on emotion recognition and interoceptive awareness training around hunger and fullness cues, using a concrete scale to rate extreme hunger to extreme fullness.

Early sessions focused on psychoeducation and skills training, formulation, self-monitoring, and goal setting. Psychoeducation included understanding the link between low food intake and dampened appetite/early satiety and the need to eat despite not feeling hunger. The idea of making a habit out of eating, regardless of appetite, was introduced. This stage also included emotion recognition training focused on helping Ezra notice when he was starting to panic at feeling full. In early sessions, several cross-sectional formulations were completed to highlight meals that Ezra had managed well, and more typical meals that were unfinished (Padesky, 1990). Ezra set goals including eating more for weight gain and learning the limits of his appetite.

Middle sessions focused on Ezra establishing a more regular pattern of eating (habit acquisition training) before moving on to graded exposure to increasing food intake (Bryant-Waugh and Higgins, 2020). Ezra was encouraged to make his own mealtime schedule (similar to an activity schedule) and to continue to monitor each meal. Ezra noticed that on some days he managed better than others, and through self-monitoring was able to notice more of the barriers, including his appetite being sensitive to daily stressful events. A positive data log was kept of challenges Ezra faced and he was encouraged to review this regularly. This was later used as evidence in thought challenging to help Ezra update his beliefs around managing at mealtimes.

Outcome

Towards the end of sessions, Ezra was in the habit of following his meal schedule and had managed to finish his portions and increase his portion sizes, noticing slightly improved appetite and enjoying some meals again. He was still underweight but had gained a significant amount and felt confident he would be able to continue. By the final sessions, Ezra reported a significant shift in his relationship to food which he felt proud of – he said that food was

‘no longer an enemy’ and rather that ‘food and me will never be friends but we can be civil’. A one-page ‘therapy blueprint’ structured worksheet was completed on the final session to capture Ezra’s learning and Ezra joined a professionals meeting with his local medical team to share progress and agree the plan for continued monitoring and relapse prevention planning.

Summary

Due to the significant negative impact on physical, social and nutritional health, it is important that a diagnosis of ARFID is based on a thorough multi-disciplinary assessment that takes into account common co-morbidities to enable effective and timely intervention. Research and clinical experience show that individuals with a diagnosis of ARFID form a heterogeneous group and it is unlikely that one treatment model will fit for all. There is therefore a need to develop individualised formulations that consider physical, nutritional and psychosocial risks and the contribution of the three ARFID drivers. ARFID is understood as a disturbance in eating behaviour and the intervention should help children and young people work towards change by targeting behaviours underpinned by the three drivers. When using a CBT approach to target behavioural change and treat children and young people with ARFID, it is important to draw on the current evidence base for ARFID and how to adapt CBT to accommodate developmental stage and/or common co-occurring presentations. It is also important that interventions are collaborative, with goal setting completed jointly with families to manage expectations, whilst monitoring agreed outcomes. There are several CBT interventions for anxiety in children and adolescents that can be drawn on when working with ARFID. We suggest that many clinicians will have the skills, knowledge and experience useful to children and young people with ARFID and that these may be applied effectively with the support of a multi-disciplinary team.

Key practice points

- (1) A multi-disciplinary approach that covers psychological, dietetic and physical health is recommended during the assessment and treatment of ARFID.
- (2) An intervention plan based on an assessment and formulation that has considered physical, nutritional and psychosocial risks, alongside drivers of behaviour, family priorities and current best evidence is advised.
- (3) Intervention and treatment planning may be individualised to best take into account any co-morbidities and the differing and often co-occurring drivers of behaviour within this heterogeneous group.
- (4) There are varied multi-disciplinary approaches that can be used to target the drivers underpinning the eating behaviour, including CBT.
- (5) In applying CBT, consideration of any adaptations needed is important such as the way information is presented and communicated, or whether to adopt a parent-led approach.
- (6) Clinicians have the required knowledge and experience of applying CBT to children and young people with anxiety and these existing skills may be applied effectively within the treatment of ARFID, with the support of a multi-disciplinary team.

Further reading

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