Current Gastroenterology Reports (2023) 25:421–429
https://doi.org/10.1007/s11894-023-00900-w

ARFID at 10 years: A Review of Medical, Nutritional and Psychological Evaluation and Management

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Accepted: 11 September 2023 / Published online: 27 September 2023

Abstract

Purpose of Review Avoidant restrictive food intake disorder (ARFID) is a diagnostic term that was established 10 years ago to describe those patients with an eating disorder, mostly children and adolescents, who have poor nutrition that is not due to body image or weight concerns. This article reviews the diagnosis and subtypes of ARFID, as well as the medical, nutritional and psychological principles of evaluation and management of the disorder.

Recent Findings In the past 10 years, clinicians have refined their approaches to managing the two major subtypes of ARFID: (1) those patients with a longer-term restriction in the amount and/or variety of the foods they eat, and (2) those patients with a shorter-term decrease in eating because of fear of aversive consequences such as vomiting, choking, GI symptoms or an allergic reaction to food. In that same time, the field of psychology has been developing evidence-based approaches to management of ARFID in each of its manifestations.

Summary Each patient with ARFID presents with a unique set of medical, nutritional and psychological factors that requires an individualized and multi-disciplinary approach in the management of this difficult to treat disorder.

Keywords Avoidant restrictive food intake disorder (ARFID) · Eating disorders · Medical management · Nutritional management · Psychological management

Introduction

It has been 10 years since the publication of the 5th edition of the Diagnostic and Statistical Manual (DSM-5) by the American Psychiatric Association in April of 2013 [1]. It was in that publication, which includes diagnostic criteria for the full range of psychiatric disorders, that a new diagnosis in the eating disorder category, Avoidant Restrictive Food Intake Disorder, was first introduced. This diagnosis, which quickly became known by the acronym ARFID, was one of several new eating disorder diagnoses (along with atypical anorexia nervosa, representing those in the anorexia nervosa category who are not underweight, and purging disorder, describing those in the bulimia nervosa category who purge but do not binge) that were introduced in the DSM-5.

These new diagnoses were developed in order to more fully describe the range of eating disorders being seen in clinical settings than had been included in the 4th edition of the Diagnostic and Statistical Manual (DSM-IV) that was published in 1990 [2]. The DSM-IV included only two major eating disorder diagnoses, anorexia nervosa (AN) and bulimia nervosa (BN), each with their own strict criteria for diagnosis, along with a catch-all category, Eating Disorder Not Otherwise Specified (EDNOS), which was applied to those with eating disorders who did not meet the specific criteria for either AN or BN. As time went on it was noted that larger numbers of patients were receiving the diagnosis of EDNOS and smaller numbers of patients were receiving the diagnoses of AN and BN, thus necessitating the introduction of the new diagnoses, including ARFID, in the DSM-5. In a study of 309 patients in our own eating disorder program, we found that approximately two-thirds of our patients had a diagnosis of EDNOS utilizing DSM-IV criteria and only

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one-third had a diagnosis of either AN or BN. In contrast, those same patients had a very specific diagnosis of AN (100 patients), atypical AN (93), ARFID (60), BN (29) and purging disorder (18) when utilizing the DSM-5 criteria [3].

Initially, there was some question whether ARFID should be included as an official diagnosis in the DSM-5. This was due to the fact that ARFID is the one eating disorder in the DSM-5 that does not have body image concerns and/or fear of weight gain as a core psychiatric component. However, a study was performed which demonstrated that patients with the features described in the ARFID diagnosis, as will be discussed below, were already presenting to eating disorder programs, falling in the EDNOS category in the DSM-IV, and therefore approval was given to introduce the diagnosis of ARFID in the DSM-5 [4]. As time has gone on during these past 10 years, this has clearly turned out to be an excellent decision, as both families and clinicians have appreciated the ability to apply a formal diagnosis to patients with the set of symptoms that encompasses the ARFID diagnosis. Pertaining to this particular review, it is a diagnosis encountered frequently by pediatricians, who often refer their patients with ARFID to pediatric gastroenterologists because of the decreases in eating, appetite and growth that are often involved. In this review, we will update current information on the diagnosis, subtypes and demographics of ARFID; discuss the medical and nutritional management of ARFID, based both on the literature and the experience of the authors; and present the latest thinking in the field of psychology on working with patients and families on bringing about the needed changes for patients with ARFID.

Diagnosis and Subtypes

The DSM-5 indicates that the diagnosis of Avoidant Restrictive Food Intake Disorder (ARFID) applies to those who have an "eating or feeding disturbance" that results in failure to meet nutritional needs [1]. It outlines that the poor eating / feeding has to be associated with significant weight loss (or failure to gain weight or grow as expected), significant nutritional deficiency, dependence on enteral feeding, or "marked interference in psychosocial functioning." And it specified that the poor eating / feeding cannot be because of lack of availability of food (or part of a culturally sanctioned practice), because of body image or weight concerns as part of AN or BN, or because of a medical condition or other mental health disorder.

Although the DSM-5 does not delineate specific subtypes of ARFID, it does give three examples of why there may be poor eating / nutrition. These are: apparent lack of interest in eating or food; avoidance based on the sensory characteristics of food; and concern about aversive consequences of eating. In clinical practice, as well as in the medical and psychological literature, these examples have become the equivalent of defacto subtypes, although with a varying degree of overlap between them in any given patient, with some subtypes representing a longer-term problem (that may continue into adulthood) and some representing a shorter-term problem (that sometimes may require steps as dramatic as hospitalization and/or placement of a nasogastric (NG) tube).

In practice, therefore, patients present for evaluation and treatment of ARFID in one of two major ways. A smaller number present with a relatively acute onset of a decrease in eating due to fear of an aversive consequence, most commonly fear of choking or vomiting or sometimes fear of having GI symptoms or an allergic reaction to food. The onset of the fear is usually precipitated by the individual having either experienced or witnessed an episode of choking, vomiting, GI symptoms or an allergic reaction. These patients may be eating as little as no solid foods at all, (rarely no liquid), and can be having a rapid decrease in weight (or can be maintaining their weight through use of soups and / or liquid supplements). Those having on-going weight loss require acute management.

A larger number of patients with ARFID present with a more long-term story of on-going restrictions in their eating. These restrictions can be in the amount of food they eat in total (i.e. those with a generally poor appetite, that can be getting better or worse over time, and/or can be affected by changes in mood/anxiety) or in the range of foods they are willing / able to eat (which can be as few as 4–5 foods or as many as 20–30 foods, which most often are due to taste factors but can also involve other sensory factors of smell or texture, and which can get somewhat better or worse over time). Most commonly, the patients with this longer-term type of ARFID present with decreases in both the total amount of food they eat and the range of foods they are willing / able to eat. Many of these patients continue to gain and grow normally despite their restricted intake while others show obvious decreases on their growth curves, for weight or height or both. The former will often be followed by their pediatricians over the years, classified as "picky eaters," and many times these patients will be self-referred by families for specialty care; the latter will often begin to show a decrease in their growth curves as they approach puberty and will often be referred by their pediatricians for specialty care.

In the medical literature, which matches our own clinical experience, the mean age of presentation for ARFID is approximately 11–13 years, which is lower than the mean age of presentation for patients with AN or BN to the same programs, with more older children presenting for ARFID and more older adolescents presenting for AN and BN [5–8]. Patients with ARFID represent approximately 10–20% of the patients presenting to adolescent eating disorder programs;

and while there are more females than males presenting for ARFID, the ratio is in the 60:40 range, rather than the 90:10 range generally reported for both AN and BN. Several articles in the literature have looked at the subtypes of ARFID [9–11, 12•]; since there is no official definition of subtypes in the DSM-5, these articles have varied in the delineations that they have used. However, they have generally reported that the more acute fear of choking / vomiting type of ARFID represents about 15% of cases in most settings with a combination of decreased interest in food and/or restricted intake of food choices representing most of the rest of the cases. Several surveys have been developed during the past few years to look at ARFID and its various presentations, with questions evaluating decreased eating/appetite, restricted range of foods eaten, and fear of aversive consequences; these surveys are not yet in widespread clinical use but are increasingly being utilized by mental health providers involved in the management of patients with ARFID [13•, 14–16].

Medical Evaluation and Management

The medical evaluation of patients with ARFID involves the standard medical history, physical examination and laboratory components, as specified for medical patients in general and patients with eating disorders in particular. The history focuses on eating patterns, how those have changed over time, the factors that play a role in what foods patients do and do not eat, and whether patients take a particularly long time to eat their meal. A full review of systems and a physical examination are performed, looking specifically for evidence of any medical symptoms or physical findings which might indicate the presence of an underlying medical condition that could account for the poor eating or poor growth that might be present. Routine laboratory testing is usually performed; this generally consists of a complete blood count (CBC), complete metabolic panel (CMP) and thyroid function tests (TFTs). Most practitioners do not obtain vitamin levels in most of their patients presenting with ARFID, since it is expected that vitamin levels will be normal in all but those with the most extreme diets.

It is particularly important, on the other hand, to review the growth curve in patients presenting with ARFID. A range of possibilities are seen in the weight, height and body mass index (BMI) curves. In the great majority of cases, weight, height and BMI all proceed normally despite either the long-term or short-term decreases in intake. In some cases, weight, height and BMI each proceed over time at the lowest percentiles; this may be perfectly normal for some patients, but for others it may indicate that they might have grown at a higher percentile if they had been eating more total daily calories over the years – this difference can be hard to distinguish in many of these patients. A third pattern that can be seen is a fall-off in percentiles for weight, height and BMI, especially in the peri-pubertal years as greater amounts of nutrition are required for normal increases in growth – in these patients it is obvious that they will need to increase their calorie intake in the months and years ahead. One other pattern that can be seen are those patients in whom height continues normally through the peri-pubertal and pubertal years while weight does not keep up as it should – those patients can be very skinny on presentation and their BMIs will be particularly low (since weight, which is in the numerator of the BMI calculation, is low, while height, which is in the denominator, is not low), but this is deceptive, since the normal growth in height in these patients is a positive indicator, compared to those who neither gain nor grow as they should, who therefore appear less skinny and have BMIs in a higher range. Reviewing the growth curve with patients and families, and explaining all of the above, is an important component of the medical management of patients with ARFID.

Based on the history, physical examination, laboratory testing and review of the growth curve, some patients may be sent for further testing or consultation. We send many of our patients, especially those who eat very slowly, for a chewing and swallowing evaluation, either to a feeding therapy center or an otolaryngologist. We send some of our patients with GI symptoms to pediatric gastroenterology, some of our patients with concerns on their growth curves to pediatric endocrinology and others for appropriate consultation as indicated. Similarly, medications are utilized for some patients with ARFID. Cyproheptiadine to stimulate appetite, can sometimes be helpful for those with decreased appetite; selective serotonin reuptake inhibiter (SSRI) anti-depressants can be prescribed for those patients with depression, especially if the depression is contributing to the decreased appetite; and olanzepine is utilized for some of the patients who are not eating because of fear of choking or vomiting, but this is done more often in the in-patient setting than the out-patient setting. While there is clinical evidence of each of these medications being helpful in some cases, there is no literature reporting on the use of medications for ARFID in any case series.

Nutritional Evaluation and Management

Nutritional management of ARFID involves an incremental approach to achieve nutritional adequacy, weight gain and a balanced eating pattern. A full nutrition history is taken, which includes gathering information about the patient's current and previous eating patterns (and the duration of each), types and amounts of foods and beverages consumed, locations the eating occurs (and doesn't occur), preferred

preparation methods, brands and origin of meals (specific restaurants or a specific person's cooking, for example), preferred and non-preferred textures, tastes, smells and appearances of foods. The Registered Dietitian Nutritionist (RDN) collaborates with patients and families to increase the patient's total amount of eating and analyzes which foods should be introduced and when. Considerations in this process include the degree of nutritional compromise, social and emotional functioning, as well as whether ARFID has been a long-term or short-term diagnosis.

ARFID has an extremely heterogeneous etiology, rendering each case and each treatment strategy unique [17•, 18]. In addition, ARFID patients present with varied levels of motivation to change their eating patterns. Some patients are perfectly content with eating a limited variety of foods, and it's their parents or pediatrician who are raising concern, whereas other patients desperately want to eat more foods and meals prepared in various locations, but are simply unable to do so. The former is more typical of our younger patients and those with long-standing ARFID, and the latter those with acute-onset, short-term ARFID and our older patients, such as teens and young adults who would like to travel or dine out with friends.

For patients with long-standing ARFID, the first step in nutritional improvement focuses on using only preferred, safe foods, or nutritional supplements if needed, to increase total daily caloric intake. Typically, much progress can be made with only safe foods, if eaten more frequently and in larger quantities. For example, if dairy is the only protein source consumed, including yogurt or cheese three times per day vs. only once can be an initial recommendation. This serves to increase the total amount of eating as well as taking a step towards balanced eating, i.e. including an appropriate combination of food groups throughout the day. In our experience, some patients are more willing to do this than are their parents, especially when the preferred foods are those deemed "unhealthy", i.e. highly processed foods or those with higher amounts of sugars or fats. In these situations, parents may benefit from education to de-stigmatize these so-called "unhealthy" foods, and many parents express some relief upon receiving permission to provide them. We have seen cases in which a patient's dietary intake has been further unknowingly limited by parents fearing they are causing more harm than good by allowing their child to eat more of certain processed foods. For example, families may try swapping the patient's preferred food for "healthier" alternatives, and in such cases, the patient with ARFID will choose to eat less in total, not more.

For those patients with relatively short-term, acute onset ARFID due to fear of aversive consequences, such as fear of choking or vomiting, an allergic reaction or GI symptoms, nutrition intervention may initially include solely nutritional supplements or an entirely liquid, soft-food diet or other specific foods and beverages the patient feels they can tolerate. Some of these patients are eating and drinking so little that hospitalization may be necessary in order to turn around their eating and weight loss. Some patients may even require NG tube feedings in order to reverse their malnutrition. As total intake advances, whether in the hospital or in the outpatient setting, foods the patient previously consumed are reincorporated into their diet, with the goal of fully resuming their typical, standard foods and beverages over time.

In both short-term and long-standing ARFID, foods are introduced systematically, prioritizing those foods which will improve the patient's malnutrition, bearing in mind the patients' ability to consume specific foods and the impact on the patient's psychosocial functioning. The recommendations for introducing new foods are individualized and may start with foods the patient ate previously, but which they no longer consume, or foods most similar to their currently acceptable foods, for example, a new flavor of juice or a new brand of muffin. This method, called Food Chaining, is also used in feeding therapy for patients with ARFID and other eating disorders. Some ARFID patients are additionally engaged in feeding therapy, and in such cases, the RDN recommends ways to incorporate the newly introduced foods into the patient's overall eating pattern.

In summary, nutritional treatment for ARFID aims to improve overall nutrition status, eating patterns, and social functioning regarding food. It is helpful to discuss ARFID treatment expectations with patients and families, as treatment goals can be as varied as the ARFID patients themselves. It is not expected that any person—with or without ARFID—is willing to eat every food or even that they have an extreme liking for all the foods they are able to eat. In some cases, especially those patients with long-standing ARFID, treatment aims to minimize their ARFID symptoms vs. curing the diagnosis. In other cases, such as those with short-term ARFID, treatment aims to fully return the patient to their previous level of eating in terms of quantity and variety of foods.

Psychological Evaluation and Management

During the past 10 years, and even in the years prior to that, it has been clear that changing the long-standing dietary patterns or fears of patients with ARFID is not easy to accomplish. Despite the best efforts of the nutritionists, gastroenterologists, eating disorder specialists and feeding therapists to whom these patients are referred, many patients with ARFID are unable to make the changes that are being recommended.

In response to that, there are psychologists who have developed expertise in the management of patients with ARFID. These psychologists have worked on developing

specific treatment plans for the various types of ARFID behaviors that have been described in the sections above [19, 20]. The rest of this paper is devoted to a discussion of these plans. While they are not yet readily available for clinical use in many settings, they do represent the state of the art in the psychological management of patients with ARFID.

Psychology can be a particularly useful discipline on the team at all stages of the treatment process. Psychologists are well suited and specifically trained to select, conduct, and interpret multi-systemic and multi-rater psychometrically validated assessment tools. This can help generate a comprehensive understanding of the various psychosocial contexts and factors that may be contributing to and/or affected by a patient's ARFID, including other psychological comorbidities (e.g., depression, anxiety).

This assessment, alongside feedback from a patient's multidisciplinary team, helps to inform a patient's unique case conceptualization, including identifying which subtypes of ARFID a patient may experience. Subtype information can be particularly useful as it shapes a patient's treatment targets, specific goals, and interventions of choice. For example, individuals with the fear of aversive consequences subtype may experience greater symptom remission and be better suited for exposure-therapy-oriented interventions. They may even be able to do this work with a behavioral or cognitive-behavioral provider who does not have specific eating disorder experience. However, for individuals with sensory avoidance, exposure-oriented interventions are less likely to achieve symptom remission and may in fact be counterproductive. Emphasis, instead, may be placed on increasing functioning and decreasing psychosocial impairment and family stress associated with ARFID symptoms.

Preliminary research indicates that approximately 50% of ARFID patients experience more than one subtype [12•]. This suggests that most ARFID cases will benefit from an individualized treatment plan specific to their unique ARFID presentation and distress. Most treatment plans seek to reduce certain ARFID symptoms and effectively manage or reduce the distress associated with others.

It is also important to note the difference between evidence-based psychological interventions for ARFID and more general, supportive psychotherapies. Evidence-based treatment seeks to balance and target specific symptoms and increase areas of functioning while considering existing research, clinician expertise, and client/family preferences [21]. This involves specifically trained practitioners operating within their competency and/or under appropriate supervision. Supportive psychotherapies are more general and flexible and may focus on global functioning or stress reduction and typically do not adhere to specific empirically supported interventions. Supportive psychotherapy can vary widely depending on the practitioner.

There can be a role for both evidence-based treatment and supportive psychotherapy in the treatment and management of ARFID. Depending on a specific patient's profile, it is possible they may benefit from either or both at different phases of their ARFID treatment and progression. It can be helpful to educate families on the difference, so they can avoid getting frustrated that they may not be seeing the results that they are expecting.

An important precursor to starting psychological intervention for ARFID is medical stabilization. Some medical inpatient stabilization units and eating disorder inpatient units may offer psychotherapy services. This work is usually in direct service of achieving medical stabilization as quickly as possible and/or laying the foundation for future psychological intervention, once medical stabilization is achieved.

Effective evidence-based psychological intervention requires patients and families to learn new information, apply it to themselves in their current context, and implement and sustain new behaviors in their lives. This complex process requires emotion regulation and complex thinking to occur. Both emotion regulation and complex thinking require consistent, adequate nutrition. Thus, eating disorder patients, across diagnoses, must be far enough along on their weight and heath restoration journey to be appropriate for outpatient psychological interventions.

Current guidelines recommend that patients are approximately 85% of their expected body weight, based on their premorbid growth and development, before they begin outpatient psychological treatment [22]. This may be particularly difficult to determine for youth with longstanding ARFID and emphasizes the importance of multi-disciplinary team collaboration. Toward this end, evidence-based psychological interventions for ARFID often include helping patients achieve their weight goals early in treatment.

Review of Relevant Psychological Constructs

A thorough clinical assessment is crucial to identifying the relevant psychological factors contributing to a patient's ARFID presentation, in addition to biological, physiological, and social and cultural factors. Below we will review three general psychological processes that are often relevant to ARFID: the distress-avoidance cycle, the cognitive triangle, and the accommodation cycle. While none of these processes are unique to ARFID, we will highlight specifically how they may contribute to the development and maintenance of ARFID symptoms.

The Distress-Avoidance Cycle

When a distressing event occurs, people often experience distress when similar events or reminders of that event occur in the future. If individuals can successfully avoid those

distressing events or reminders, they experience relief from their distress. Over time, the brain learns that the way to get relief from that distress is to avoid those situations and reminders.

Unfortunately, this distress-avoidance cycle often leads to *greater* distress and *increased* avoidance because it prevents individuals from learning two important things: (1) the distressing situation/ reminder is not inherently bad or unsafe and (2) individuals can tolerate their distress without avoiding it. To break an ingrained distress-avoidance cycle, clinicians collaborate with patients to identify a plan to learn these two things slowly and systematically over time.

For example, Manny, a 9-year-old-cisgender male with ARFID, had a stomach flu when he was a toddler and vomited mashed potatoes after dinner. Vomiting was quite distressing to him, and even though the mashed potatoes did not *cause* him to vomit (i.e., the stomach flu did), Manny's brain linked the vomiting, and associated distress, to mashed potatoes.

From then on, Manny refused to eat mashed potatoes. Every time he was distressed by the possibility or even thought of them, he avoided them: he hid food, ran from the dinner table, cried when they were discussed, etc. Because he never learned that (1) he could eat mashed potatoes *without* vomiting or (2) he could tolerate his distress about them, Manny's fear grew over time. He eventually stopped eating all potatoes and eventually all vegetables, which was an important part of his ARFID presentation.

The Cognitive Triangle

A major concept underlying cognitive behavioral therapy (CBT) is known as the "Cognitive Triangle." The general idea is that people have thoughts, emotions, and behaviors, and each of these can impact the others. The thoughts we have can impact how we feel and influence our actions and vice versa. For example, if someone thinks, "I'm going to mess up my presentation," they may start to feel anxious and misspeak. Similarly, if someone misspeaks during a presentation and they think "I'm a terrible public speaker," they may get scared to present in the future.

Psychotherapists first work with clients to identify the different parts of the cognitive triangle and then collaborate on which parts of the triangle (i.e., thoughts, actions, or emotions) they can change and how. For example, changing the thought "I'm a terrible public speaker" to "It's OK if I make a mistake" may positively impact a person's emotion and/or behavior.

For example, Manny initially had the thought "If I eat mashed potatoes, I will throw up." This made him feel scared and led him to refuse to eat potatoes. Over time, his thoughts, emotions, and behaviors intensified and began to shift. Eventually he started thinking, "Vegetables are gross- I can't eat them!" This made him feel frustrated and often led to him cry or yell during mealtimes. He also developed certain food rules – "If my foods touch, it's gross" which made him worry about his foods touching and require his food be plated in a particular way. These "triangles" often repeat themselves over and over and become ingrained patterns.

The Accommodation Cycle

The accommodation cycle involves interactions between an individual and a caregiver. Accommodation, defined broadly, is any action that a caregiver performs to prevent or reduce the distress of their loved one [23]. Caregivers accommodate all the time, and it is normal and healthy to do so – especially when children are young. Parents accommodate their infants to keep them happy, healthy, and quiet! As children age, parental accommodation typically decreases naturally over time, and children learn to tolerate and manage their own distress more effectively and independently.

However, some individuals, especially those with biological or psychological sensitivities, may have a harder time learning to independently regulate their distress. They may become more distressed more frequently and may require additional help to learn effective coping strategies. This can lead caregivers to more frequently and consistently accommodate, which relieves the child's distress in the short-term. However, the child does not have the opportunity to learn to independently manage their distress and remains dependent on the parent to do so for them, so the cycle continues.

In the case of Manny and his ARFID, Manny eventually became distressed if anyone else in the home ate vegetables, not just potatoes. To reduce his distress, which became quite significant and included him refusing to eat for days at a time, his parents accommodated by not serving him potatoes or vegetables and eventually escalated to parents also not eating vegetables at home. Manny was unable to learn how to manage his distress, which led his parents to continue accommodating his ARFID in order to manage it for him. The accommodation cycle exacerbated the ARFID symptoms to the point of being incredibly disruptive for the family inside and outside of the home.

Preliminary Evidence-Based Psychological Treatments for ARFID

As our empirical understanding of ARFID continues to grow, so does the exploration of various psychological interventions to treat it. For the purposes of this review, we will briefly summarize three emerging treatments. Of note, these are not the only psychological interventions for

	FBT for ARFID	CBT for ARFID	SPACE for ARFID
Client Age	5-24	10+	>5-24+
Treatment Target	Increase child weight	Increase nutrition, exposure to new foods	Increase food flexibility
Who Attends Session	Caregivers (Child)	Child (Caregiver)	Caregivers
Treatment Length	16-20	20-30	12-16
What Changes?	Parent + child behavior	Child beliefs / behavior	Parent behavior (beliefs)
Type of Change	Required	Collaborative	Unilateral
Mechanism of Change	-Increase parent self-efficacy to feed -Regular required eating (child)	-Increase child willingness/ability to face fears -Decrease negative thoughts/emotions about eating	-Decrease family accommodation, food-related stress - Increase supportive responses

Fig. 1 Overview of Preliminary Psychological Treatments for ARFID. *Note.* ARFID = Avoidant/Restrictive Food Intake Disorder; FBT = Family Based Therapy; CBT = Cognitive Behavioral Therapy; SPACE = Supportive Parenting for Anxious Childhood Emotions. Client age in years. Treatment lengths in weeks

ARFID; these were selected due to (1) being based on existing validated psychological treatments with specific ARFID adaptations, (2) their demonstrated preliminary empirical support, and (3) diversity of treatment targets and proposed mechanisms of change. These interventions are discussed below and summarized in the accompanying Fig. 1.

Family Based Treatment for ARFID

Family Based Treatment for Anorexia Nervosa (FBT), also known as the Maudsley Approach, is considered by many to be the gold standard treatment for anorexia nervosa in adolescents [22, 24]. It involves working with families on giving them the tools to accomplish needed changes in the eating patterns of their child or adolescent. Over time, FBT has been adapted to target other eating disorders and populations, including those with ARFID [23, 24]. Existing empirical evaluations of FBT for ARFID and other eating disorders have demonstrated preliminary feasibility, efficacy, and effectiveness, although additional research is needed to expand and replicate these findings [25•, 26–28].

The main targets of FBT for ARFID are dependent on ARFID subtype, but generally focus on regular, required eating and slow and steady weight gain. Clinicians focus on increasing parents' sense of self-efficacy in changing their feeding practices and thereby reduce restrictive eating behavior [29]. Of note, while FBT for ARFID maintains many of the same interventions as FBT for other restrictive eating disorders, it involves some key adaptations based on ARFID subtype. For the lack of interest subtype, the treatment emphasizes decreased mealtime duration. For the sensory sensitivity subtype, clinicians target increasing the range of foods consumed. For those with the fear of aversive consequences subtype, FBT for ARFID targets decreasing eating-related fear and anxiety. This treatment consists of three phases and utilizes approximately 16–20 caregiver-focused sessions, with optional child involvement.

Cognitive Behavior Therapy for ARFID

Cognitive Behavioral Therapy for ARFID (CBT-AR) is a specifically designed cognitive behavioral therapy to reduce nutritional deficiency, increase exposure to new foods, and decrease negative feelings and expectations around food and eating [30]. Although developed very recently, preliminary effectiveness for CBT-AR has been demonstrated in both youth and adult populations, but additional research exploration is still required [31•, 32].

CBT-AR consists of four modular stages [30]. Stage 1 focuses on ARFID psychoeducation and, as needed, weight gain/ stabilization using predominately preferred foods. In Stage 2, patients work with the therapist to identify, explore, and learn about novel foods. Stage 3 includes the bulk of treatment; here the therapist works with the patient to target the underlying mechanisms maintaining

their ARFID symptoms. Modules in Stage 3 are organized by ARFID subtype; clinicians work through as many modules as needed, starting with the most impairing. Stage 4 consists of progress review, relapse prevention and completion of treatment.

CBT-AR is conducted in an outpatient setting in 20–30 weekly sessions, depending on whether a patient is in need of weight restoration. CBT-AR is intended for individuals with ARFID ages 10 and up. Caregivers are more thoroughly integrated into treatment with youth, whereas older adolescents and adults engage individually.

Supportive Parenting for Anxious Childhood Emotions for ARFID

Supportive Parenting for Anxious Childhood Emotions (SPACE) is a manualized psychological intervention developed for youth with anxiety disorders and OCD, with growing empirical support [33]. Importantly, in SPACE, clinicians work exclusively with caregivers to target caregiver accommodation (as described above), in order to change caregivers' behaviors and reactions to their child's symptoms. This can be particularly helpful if children are not willing or able to engage in treatment independently.

Given the commonalities between youth anxiety disorders and ARFID, like high levels of child anxiety, child avoidance, and caregiver accommodation, a specific adaptation of SPACE for ARFID was developed [34]. The goals of SPACE for ARFID include increasing food-related flexibility, decreasing food-related stress, and increasing supportive parenting [35•]. Of note, weight restoration is not a target of SPACE for ARFID, so youth must be medically stable and considered weight restored prior to treatment.

Specific modules have been added to the standard SPACE protocol to target effective meal planning, identifying preferred and fear foods, and strategies to reduce distress around mealtimes and eating. SPACE for ARFID is conducted in 12 to 16 weekly caregiver-only sessions and can be useful for children through emerging adults.

Conclusions

As can be seen throughout this review, written by an Adolescent Medicine / Eating Disorder specialist, a nutritionist, and two psychologists, the evaluation and management of ARFID requires a multi-disciplinary approach. It has become increasingly apparent over the 10 years since the diagnosis was first given a name, that each patient with ARFID presents with his or her own individual set of medical, nutritional, and psychological needs. It has also become increasingly apparent how difficult it is to get patients with ARFID to change their eating patterns, whether short-term or long-term, and overcome their fears. It is hoped that the approaches outlined in this review will be further refined in the 10 years ahead in order to further help patients with ARFID, and their families, accomplish their needed goals.

Author contributions Martin Fisher MD wrote the Introduction, Diagnosis and Subtypes and Medical Management sections of the paper. Jacqueline Zimmerman MS, RD wrote the Nutrition Management section of the paper. Caroline Boucher MA and Lauren Yadlosky PhD wrote the Psychological Management section of the paper.

Declarations

Competing Interests The authors declare no competing interests.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

Conflict of Interest The authors declare that they have no conflicts of interest in the writing of this paper.

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