APPLYING EXPRESSIVE ART THERAPIES TO COGNITIVE BEHAVIORAL INTERVENTIONS FOR CHILDREN AND ADOLESCENTS WITH AVOIDANT RESTRICTIVE FOOD INTAKE DISORDER

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DEDICATION

This dissertation is dedicated to all of my patients that have allowed me to be a part of their healing process. You have been my greatest inspiration. Thank you for allowing me to bring a little color into your recovery journey.

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I would like to first thank my chair, Dr. Erica Goldblatt Hyatt. I have been so unbelievably fortunate to have had the opportunity to learn from you. Thank you for your unending support and encouragement throughout this entire process, while honoring my passion for expressive therapy. Without your belief in me, I am not sure I would have made it to the end of this journey.

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To my guardian angel in heaven- I know you are looking down on me with pride in your heart. You always knew I could do it ….you were right!

ABSTRACT

APPLYING EXPRESSIVE ART THERAPIES TO COGNITVE BEHAVIORAL INTERVENTIONS FOR CHILDREN AND ADOLESCENTS WITH AVOIDANT RESTRICTIVE FOOD INTAKE DISORDER

Emily B. Masciulli, LCSW

Dissertation Chair: Erica Goldblatt Hyatt, DSW

Avoidant Restrictive Food Intake Disorder (ARFID) is a relatively "new" eating disorder diagnosis that presents uniquely in children and adolescents. This dissertation first offers an analysis of current eating disorder interventions with a focus on children and adolescents and their unique developmental needs followed by a discussion of the strengths and limitations of family-based treatment (FBT) and cognitive behavior therapy (CBT). Currently, no treatment manual has been tested for ARFID, and further research examining the effectiveness of different treatment options for children with ARFID is clearly warranted. One potential treatment approach is expressive arts therapy, which may be valuable as a developmentally-appropriate adjunct to CBT for ARFID. This dissertation asserts that including an expressive arts therapy component to existing cognitive behavioral therapies will make current interventions more applicable and effective for children and adolescents with ARFID. Specific proposed interventions combining the evidenced-based practice of CBT with expressive arts therapy as an adjunct to standard treatment are proposed for use in the therapeutic setting with ARFID populations. These interventions are outlined in detail and enhanced with composite case study examples.

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Introduction

At least 30 million Americans suffer from an eating disorder in their lifetime (Hudson, Hiripir, Pope & Kessler, 2007; LeGrange, Swanson, Crow, & Merikangas, 2012). When examining the prevalence of eating disorders in children and adolescents, the literature suggests that eating disorders are the third most common chronic illness among adolescent females (Kalisvaart & Hergenroeder, 2007). Three percent of U.S adolescents are affected by an eating disorder and most do not receive treatment for their specific condition (Swanson, Crow, LeGrange, Swendsen & Merikangas , 2011). These statistics, classified as either anorexia nervosa (AN), bulimia nervosa (BN), or eating disorder not otherwise specified (EDNOS), outline the prevalence of eating disorders in the population in general as well as the high prevalence of eating disorders in adolescents.

Past versions of the *Diagnostic and Statistical Manual of Mental Disorders* classified 50% of children and adolescents diagnosed with an eating disorder with EDNOS (Nicholls, Chater & Lask, 2000; Madden, Morris, Zurynski, Kohn & Elliot, 2009; Peebles, Hardy, Wilson & Lock, 2010). This diagnosis of EDNOS included children and adolescents whose eating disorder symptoms of weight loss and restricting food intake stemmed from anxieties not related to body image or fear of gaining weight. Examples of these anxieties are fear of gastrointestinal discomfort, fear of choking, or fear of vomiting. Grouping so many in the EDNOS diagnostic category excluded an entire group of individuals presenting with their own distinct clinical presentation.

AVOIDANT/RESTRICTIVE FOOD INTAKE DISORDER

The diagnosis and classification of Avoidant/Restrictive Food Intake Disorder (ARFID) represents an attempt to recognize individuals who may fall under such other distinct classifications. ARFID is a "new" category of eating disorders described in the fifth edition of *The Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013) and was added as part of the changes made to criteria in the previous DSM-IV-TR Feeding and Eating Disorders of Infancy or Early Childhood and Eating Disorders. The addition of the ARFID diagnosis was implemented to include a subgroup of patients experiencing food restriction or avoidance that were excluded from a specific classification due to lack of meeting criteria for also having shape or weight concerns. The DSM-5 Eating Disorders Working Group recognized that this subset of individuals was distinct from those with AN due to the lack of fear of weight gain, body image preoccupation, or drive for thinness and conducted field studies to better describe this unique clinical group (Fisher et. al., 2014; Norris, Spettigue, & Katzman, 2016) and the criteria for ARFID were outlined.

According to the DSM-5 criteria (American Psychiatric Association, 2013), to be diagnosed as having ARFID a person must display:

A. An eating or feeding disturbance (e.g., apparent lack of interest in eating or food; avoidance based on the sensory characteristics of food; concern about aversive consequences of eating) as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:

1. Significant weight loss (or failure to achieve expected weight gain or faltering growth in children).
2. Significant nutritional deficiency.
3. Dependence on enteral feeding or oral nutritional supplements.

4. Marked interference with psychosocial functioning.
5. The disturbance is not better explained by lack of available food or by an associated culturally sanctioned practice.

B. The eating disturbance does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way in which one's body weight or shape is experienced.

C. The eating disturbance is not attributable to a concurrent medical condition or not better explained by another mental disorder. When the eating disturbance occurs in the context of another condition or disorder, the severity of the eating disturbance exceeds that routinely associated with the condition or disorder and warrants additional clinical attention. (p.334).

Kurz, van Dyck, Dremmel, Munsch, and Hilbert (2015) state that ARFID in children includes several presentations including lack of interest in eating or food, eating a very limited amount of food connected to sensory or other properties of the food (color, texture, taste, brand) and the avoidance of food based on a specific fear, such as choking or vomiting.

Norris and Katzman (2015) indicate that the prevalence of ARFID in child and adolescent eating disorders has ranged from five to 14% and as high as 22.5% in a pediatric day treatment program. Although the percentage of ARFID patients varies between studies cited in the literature, the consistent similarity when ARFID patients are compared to those diagnosed with other eating disorders is that they are younger, more likely to be male, and have a higher rate of comorbid psychiatric and/or medical symptoms (Norris et al., 2014).

Bryant-Waugh (2012) posits that valid diagnostic criteria are central to the development and evaluation of therapeutic interventions. With the development of the ARFID diagnosis,

clinicians and treatment providers now have a diagnostic label to develop specific treatment interventions. As the knowledge and research base on ARFID continues to grow, it can be assumed that studies centered on intervention will begin to include this newer diagnosis.

To date, there are no empirical studies guiding treatment for ARFID (Lock, 2015). The literature focuses primarily on the diagnosis of AN and BN. Children and adolescents with ARFID are demographically and clinically distinct from those with AN and BN (Fisher et al., 2014), therefore the current literature base is not necessarily applicable to the ARFID population, but it is important to examine these interventions for relevancy to the treatment of ARFID.

The most common evidence-based intervention in the literature for AN is family-based treatment (FBT) (Lock & LeGrange, 2013), also known as Maudsley Family Therapy (Eisler, 2005). FBT is a manualized treatment that empowers the parents of children and adolescents to directly manage the eating disorder behaviors in an outpatient setting. FBT positions the family as the expert on their child and enables parents to completely take charge of the refeeding process with the therapist serving as a consultant. The refeeding process is defined as weight restoration after weight has been lost due to deficit in nutrition such as restricting food intake. In the refeeding process, the parents recognize that their child needs to gain weight for optimal physical and mental health and plan nutritionally what is needed for their child. The parents are in complete control of bringing the child through recovery, and they choose and plate the food while supervising the consumption and completion of the meal by the child. This process is often time-consuming and requires complete focus and commitment on the part of the parents.

Literature also supports the efficacy of cognitive behavioral therapy (CBT) and exposure and response prevention (ERP) in the treatment of eating disorders(Reilly, Anderson, Gorrell, Schaumberg, & Anderson, 2017; Steinglass et al., 2011). In CBT and ERP, individuals are

challenged to identify and reframe cognitive distortions about food and body image as well as being exposed to feared food objects or situations that cause anxiety. The goal is to develop increased tolerance and ability to cope with distress and anxiety. It is important to appreciate how individuals with ARFID can be treated similarly to individuals presenting with AN as they are both restrictive eating disorders but have clearly different core features (Strandjord, Sieke, Richmond & Rome, 2015).

Another consideration in treating the ARFID population requires exploring which treatments are developmentally and cognitively best-fitting according to the developmental features of children and adolescents. The interventions in the eating disorder literature may fail to meet the developmental needs of children and adolescents whose cognitive processes might be very different from adult patients with eating disorders. For example, it may be developmentally challenging for a child or adolescent to engage in the process of CBT if she has difficulty identifying and verbalizing her thoughts and emotions. One approach that may be considered is the addition of art psychotherapy, which has been found to be helpful for individuals who have difficulty expressing or identifying feelings, as well as those who are uncomfortable with verbal communication (Briks, 2007). Expressive language in the child and adolescent population can at times be a struggle depending on an individual's various developmental level and cognitive skill-set (Bjorklund and Causey, 2017). Using art therapy with adolescents can also assist in the externalization of an internal stressor, allows individuals to distance themselves from their own struggles, and can be used as an expressive language. Thus, employing expressive art therapy has the potential to be useful when identifying an intervention that matches the specific developmental needs for children and adolescents with ARFID. Specifically, integrating art in CBT could provide a concrete foundation to the more abstract concepts of CBT and offer visual

and tactile routes to learning and expression (Morris, 2014). This dissertation will examine how the utilization of expressive arts may be beneficial as an adjunct to CBT when treating children and adolescents with ARFID.

Purpose of the Study

The majority of individuals presenting with ARFID are children and adolescents. As the ARFID diagnosis is relatively new, there are currently no specialized interventions that exist. As ARFID patients present for evaluation and treatment in the same setting as individuals with other eating disorders, there is often a question of how to apply current eating disorder treatments to this newer sub-group. Treatments for ARFID are in the beginning stages of development; therefore it is imperative to examine the unique needs of the ARFID population while simultaneously being aware of the specific needs of children and adolescents.

This dissertation will offer an analysis of current eating disorder interventions with a focus on children and adolescents and their unique developmental needs. A proposed treatment model will be outlined aiming to fill the gap in the literature by bridging current treatment interventions for eating disorders to the treatment of ARFID, thereby specifically addressing patients with this diagnosis. The goal of this dissertation is to analyze and compare the current treatment modalities for restrictive eating disorders and examine how they could apply to treating the ARFID population. The unique developmental needs of children and adolescents will be explored through a lens of developmental theory according to the perspectives of Piaget and Vygotsky. Expressive arts therapy will be examined as a developmentally appropriate way to enhance these evidence-based treatments. Specific proposed interventions combining the

evidence-based practice of CBT with expressive therapy as an adjunct will be outlined in detail for use in the therapeutic setting with ARFID populations.

Thesis Statement

ARFID is a new diagnosis that presents very uniquely in children and adolescents. The current evidence-based practices of FBT and CBT in eating disorder treatment may fail to meet the developmental needs of children and adolescents. It is proposed that adding an expressive arts therapy component will make current interventions more applicable and effective for children and adolescents.

Research Questions

The research questions addressed in this dissertation are as follows: How can current evidence-based treatment interventions for restrictive eating disorders be applied to the ARFID population? What are the developmental needs of children and adolescents with ARFID? What are the current eating disorder treatment interventions lacking when considering the developmental needs of children and adolescents? How can expressive art therapy be used in conjunction with these interventions to enhance treatment and make it more developmentally appropriate for younger patients with ARFID? What might appropriate expressive therapy as an adjunct to CBT look like? What might the outcomes of such applications be, and how will they improve the quality of life of children, adolescents, and their families living with ARFID?

Significance of the Study

It is expected that this proposed treatment model of integrating expressive arts into CBT for children and adolescents with ARFID will fill a gap in the current literature as there is no current treatment intervention proposed specifically for the ARFID population. A treatment

intervention developed specifically for children and adolescents diagnosed with ARFID may also improve clinical recognition of this recently named diagnosis. In terms of limitations, the proposed interventions outlined in Chapter 5 have never been tested empirically with the ARFID population. The development of these treatment interventions may pave the way for additional research by implementing these interventions in clinical practice and providing an evidence-base for them.

Methodology

A narrative literature review was conducted with a goal to critique and summarize the existing literature on evidence-based treatment for eating disorders as well as to identify gaps in the literature on how these treatments can apply to the treatment of ARFID. Ferrari (2015) explains that narrative review, or a non-systematic review, aims to identify and summarize what has been previously published while seeking new areas for further research that are not yet addressed in the current literature. Narrative literature reviews can assist in identifying rationales for further research and also allow for speculation on new types of interventions available that are not previously described in the literature. There are limitations of narrative literature reviews that are important to consider. First, the methods used to select articles may not be clearly described as in systematic literature reviews and secondly, there is a possibility of bias in the selection and evaluation of the literature. Lastly, narrative literature review is not reproducible as a systematic literature review is. The goal of narrative literature review is to discuss and evaluate current literature while summarizing its relation to the research questions of the dissertation. The literature review will highlight the main points of existing research while connecting to further research needs.

For the purpose of this dissertation, the literature review on eating disorder treatment focuses specifically on the treatment of AN, as this eating disorder diagnosis is the most comparable to ARFID in terms of restriction of food and difficulty eating. The literature comparing the clinical presentation and treatment of ARFID to AN reviewed to identify clinical similarities that could make the empirical interventions for AN applicable to treating ARFID. Literature that focused primarily on BN was excluded from the review. The literature was reviewed with a focus on identifying strengths and limitations of existing interventions. The current literature was also reviewed to identify empirically-based expressive art therapy interventions and examine how they may be applied in conjunction with evidence-based therapies with the child and adolescent ARFID population.

When searching for relevant literature for review, the Franklin search engine through the University of Pennsylvania library website was used as well as Google Scholar search engine. Searches were made using the keywords: Avoidant Restrictive Food Intake Disorder (ARFID), evidence-based eating disorder treatment, family based therapy for the treatment of eating disorders, cognitive behavioral therapy in the treatment of eating disorders, exposure and response prevention in the treatment of eating disorders, expressive therapy, expressive therapies continuum, cognitive developmental theory, neurobiology, and art.

This dissertation reviewed the limited amount of literature available on ARFID. For the purpose of this dissertation, no new literature was added for review that was published after December 2017, with the exception of Norris et al. (2018) and Lock et al. (2018). Norris et al. (2018) was included due to importance of examining ARFID clinical sub-types and is the first study to explore the utility of grouping adolescents into specific ARFID clinical subtypes. Due to the limited availability of publications focusing on the ARFID diagnosis, this literature review

also utilized narrative analysis of case studies to illustrate the differences in the many ways that ARFID can present in a clinical setting. Lock et al. (2018) was included to highlight new research on the possible benefit of including expressive arts in FBT.

As ARFID is a newer diagnosis, the literature base on this topic continues to grow. Through the course of the development and research process of this dissertation, new literature has continued to emerge. Most recently, a treatment manual for ARFID written by Jennifer Thomas, PhD and her team is in the publication process. This treatment manual is proposed to be titled, "Cognitive-Behavioral Therapy for Avoidant/Restrictive Food Intake Disorder: Children, Adolescents and Adults". This will be the first published manual on the treatment of ARFID.

Experts in the eating disorder field were consulted for appropriateness of literature inclusion. Rollyn Ornstein, M.D., adolescent medicine physician and Professor of Pediatrics at Penn State College of Medicine who specializes in the treatment of eating disorders, reviewed the literature base throughout the course of the dissertation writing process. Jennifer J. Thomas, Ph.D., co-Director of the Eating Disorders Clinical and Research Program at Massachusetts General Hospital and Associate Professor of Psychology in the Department of Psychiatry at Harvard Medical School, was also consulted in regards to the latest literature on ARFID. This author spoke by telephone with Dr. Thomas on November 14, 2017 to discuss current research as well as to outline the goals of this dissertation.

The proposed interventions outlined in Chapter 5 use composite case narratives while examining expressive therapy through the lens of developmental theory. The patients described in the case studies throughout the dissertation reflect many different aspects of actual clients with ARFID that are drawn from the writer's clinical practice. The utilization of case study was

chosen because it "draws on multiple perceptions and data sources to produce contextually rich and meaningful interpretation". (Padgett, 2008, p.33). Three different composite case studies are used throughout the dissertation to give the reader an understanding of how ARFID symptomatology can present in a variety of different ways. The details from the composite case studies described throughout the dissertation are drawn from cases the author has observed and interacted with in clinical practice. One benefit of using composite cases is that it allows for the blending together of the details of several cases with similar presentations of ARFID to create one story. This accurately reflects possible ARFID symptomatology while protecting the identity of specific patients.

The images included in the illustrations of proposed interventions section in Chapter 5 of the dissertation are real images taken from clinical work and were created by actual patients. The images do not contain any identifying data and permission from the creators and parents of the children who created the art was obtained. The Institutional Review Board (IRB) at the University of Pennsylvania was consulted regarding the inclusion of patient created art in this dissertation and responded that the IRB will always advocate for obtaining permission, but that using this artwork for the purpose of this dissertation did not qualify as human subject's research requiring IRB review.

As no manual for the treatment of ARFID currently exists, manuals in current literature were examined for relevance to the AFRID population and were considered when developing appropriate interventions for ARFID. The following manuals were selected and critically explored and dissected for relevance to the ARFID population: *Treatment Manual for Anorexia Nervosa: A Family Based Approach*. (Lock & LeGrange, 2013), and *Trauma-Focused CBT for Children and Adolescents: Treatment Applications* (Cohen, Mannarino, & Deblinger,

2012). Some elements of the FBT manual can be applied to the treatment of ARFID such as the inclusion of family in treatment and the focus on weight restoration. Many of the components of trauma-focused CBT can be applicable to treating the ARFID population including psychoeducation and parenting, relaxation, affective expression and modulation, cognitive coping, in vivo exposure, and conjoint parent child sessions.

Ideally it would be beneficial to test these proposed treatment interventions in clinical practice using qualitative review, but due to time considerations for the completion of a dissertation, testing the treatment interventions in practice will occur after dissertation is complete.

Methodological Reflexivity

This author is a licensed clinical social worker (LCSW) who primarily works as a clinician doing therapy with children, adolescents, and their families in their recovery from eating disorders. The author found, anecdotally, that the number of children and adolescents presenting with ARFID at a partial hospitalization program has dramatically increased over the past ten years of practice. With the recognition and development of the ARFID diagnosis in the DSM- 5 in 2013, there was finally a name for this subgroup of patients with a distinct clinical presentation. The evidence-based treatments for eating disorders in the literature focus primarily on AN and BN, leaving little to guide clinicians on specific treatment interventions for the ARFID population.

Considering the lack of literature on ARFID, it was a goal of the author to contribute to this developing literature base by using experience from practice combined with what is already established to create proposed interventions that may be effective for use with the child and

adolescent. The author has found in clinical practice that children respond well to the inclusion of the expressive arts in therapy and wanted to examine specifically how children and adolescents with ARFID may benefit from adding expressive arts to the developing treatment interventions.

CHAPTER 1: AVOIDANT RESTRICTIVE FOOD INTAKE DISORDER (ARFID)

Case Study: Luke

Luke is a 13-year-old male with a long-standing history of picky eating. His parents describe him as a happy baby and young child, but he always had difficulty with eating. The transition from formula to baby food and then table food was a struggle for Luke. As Luke grew up, he would eat a limited variety of foods – mostly macaroni and cheese, chicken nuggets, cheese sticks, peanut butter and jelly sandwiches (with the crusts cut off), pizza, and popcorn. Luke has always enjoyed sweets like candy, baked goods, and ice cream, and would eat these foods if they were available. Although his variety was very limited, he was able to eat enough of his preferred foods to meet his needs for growth and development and has always been on the 25th percentile for his height and 10th percentile for weight. Luke's parents report that they have always encouraged him to eat more in terms of amount and variety, but that he never really had much of an interest in food.

Over the past year, Luke has become increasingly picky and further limited his food variety. For example, Luke frequently ate chicken nuggets and pizza, but now would only eat one brand of frozen chicken nuggets and would only eat pizza from his favorite pizza delivery chain. When he did eat these foods, he reported that his belly often felt full even after a few bites. Luke's parents were becoming increasingly frustrated but felt that as long as he was eating they would provide him with his preferred foods, and didn't fight with him to increase his variety.

Luke's pediatrician became concerned at his yearly checkup noting that Luke had made minimal gains for his growth and development. When questioned about why Luke wasn't eating, he reported that he was never really that hungry and when he did eat he became full fairly

quickly. His parents reported that he also frequently complained of belly pain and "not feeling well". The pediatrician referred Luke to a pediatric gastroenterologist and over the next few months, Luke underwent a variety of medical tests to rule out medical conditions such as gastric emptying issues, allergies, and Crohn's disease, among others. When no medical cause was found to account for his difficulty with eating, loss of appetite, and belly pain, Luke was referred to an adolescent medicine provider to rule out an eating disorder.

When presenting at the adolescent medicine clinic, Luke denied any fear of gaining weight or getting fat; in fact, he felt he was "too small and too skinny" and wanted to grow. He was bothered by the fact that he was a lot smaller than his friends. His parents did not feel as though Luke had an eating disorder and were frustrated about not being able to receive a diagnosis for their son. After a thorough evaluation, Luke was diagnosed with ARFID and was referred to appropriate nutrition and therapy providers. Luke's parents had never heard of ARFID and were shocked to learn that their son had an eating disorder. At the same time, they were relieved to finally have an answer for what was going on with Luke and to be able obtain the appropriate treatment. Luke's story illustrates one example of how ARFID can present clinically.

Clinical Presentation

The diagnosis and classification of ARFID in the DSM-5 recognizes individuals who may have historically fallen under the EDNOS category and provides a specific diagnosis for this group of individuals with their own distinct clinical presentation. Past editions of the *Diagnostic and Statistical Manual of Mental Disorders* classified 50% of children and adolescents diagnosed with an eating disorder with EDNOS (Nicholls, Chater & Lask, 2000; Madden,

Morris, Zurynski, Kohn & Elliot, 2009; Peebles, Hardy, Wilson & Lock, 2010). Children and adolescents meeting criteria for ARFID had fallen into this EDNOS category which grouped them with a variety of eating disorder presentations therefore making specific treatment more difficult.

Clinically, ARFID can present in a variety of ways. Zimmerman and Fisher (2017) state, "it is critical to appreciate ARFID is not meant to encompass all picky/fussy eaters. Its purpose is to identify patients with clinically significant restrictive eating, the magnitude of which results in severe nutritional deficiencies and/or persistent inability to meet energy needs." (p. 97). The main feature of the diagnosis is an eating or feeding disturbance and is manifested by persistent failure to meet appropriate nutritional and/or energy needs. This feeding disturbance may include lack of interest in eating or lack of interest in food in general. It can also include food avoidance based on sensory characteristics of food, or fear that something bad will happen when eating such as gastrointestinal discomfort, choking, or vomiting. Other important distinguishing features of the ARFID diagnosis are that the disturbance is not better explained by lack of available food or by an associated culturally sanctioned practice, and there is no evidence of a disturbance in the way in which one's body weight or shape is experienced. When considering the diagnosis of ARFID, one must conclude that the eating disturbance is not attributable to a concurrent medical condition or not better explained by another mental disorder. (APA, 2013).

A patient with ARFID may present for treatment with the following symptoms: significant weight loss, failure to achieve expected weight gain, and/or falling off their growth curve. These children have significant nutritional deficiency and may depend on tube feeding or oral nutritional supplements to achieve desired nutrition. Often children who present with symptoms consistent with this diagnosis have already been evaluated and treated by a variety of

other disciplines, most often pediatric gastroenterology, and may have already undergone various medical tests and procedures to rule out any underlying medical issues, e.g., bloodwork, swallowing studies, endoscopy and/or gastric emptying studies, when finally presenting for treatment of an eating disorder. When all medical causes have been ruled out, this then prompts assessing therapists to look for underlying fears and cognitive processes related to food.

Health risks and medical complications for individuals with ARFID are similar to those with AN who are nutritionally compromised and of low weight. These include gastrointestinal complications (bloating and constipation), cardiac complications, electrolyte imbalances, low blood sugar, and low bone density. Malnutrition may also lead to falling off growth curves and possible stunting of potential height. Strandjord, Seike, Richmond and Rome (2015) examined the differences in patients with AN and patients with ARFID who were hospitalized for medical complications. They found that while patients with ARFID and AN may have similar caloric intake, ARFID patients tend to rely more on enteral nutrition and require longer hospital stays that those with AN.

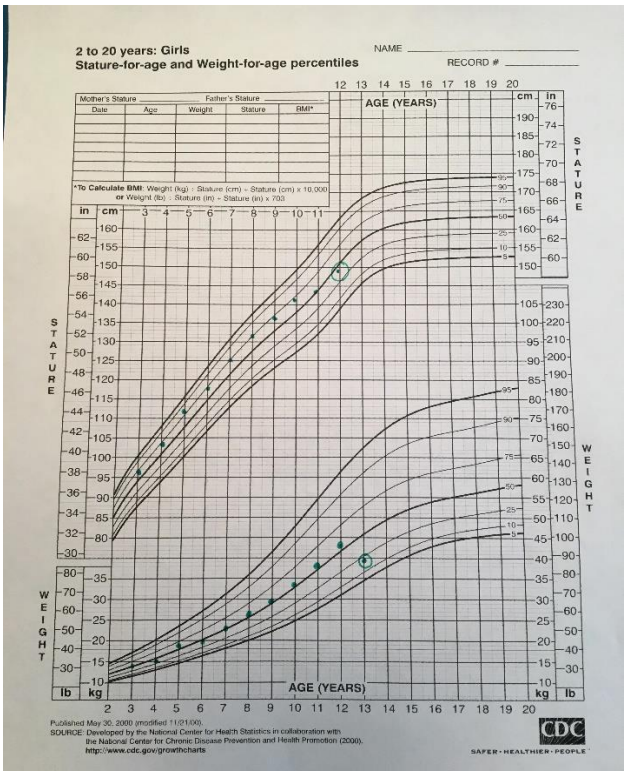

Figure 1. The following figure shows an illustration of what a growth curve may look like for a 13- year-old female who presents with weight loss after developing a fear of choking after she choked on a cheese stick and required the Heimlich maneuver. Her developmental history shows her weight values are following the curve of the 50th percentile. After the choking incident her weight percentage fell to the 20th percentile. Her height, which was always on the 75th percentile, dropped as well. This illustrates the compromised growth and development of ARFID patients.

In addition to medical complications, children and adolescents with ARFID have significant psychological and social stressors. Zimmerman and Fisher (2017) point out that some individuals with ARFID experience high levels of distress and anxiety when near certain foods or when faced with particular food smells or textures. This can cause avoidance in social situations resulting in isolation which are of great clinical concern as well.

Clinical Presentation and Prevalence of ARFID

Bryant-Waugh (2013) asserts that "it is impossible to give a 'typical' description of ARFID" (p. 423) as this diagnosis covers a range of different clinical presentations. One way to explore this range of clinical presentations is through case studies as will be utilized throughout the proposed treatment intervention. A case study can provide a detailed conceptual analysis of

this particular diagnosis by helping to explain specifics about how the diagnosis presents itself in terms of symptoms, treatment intervention, and outcomes. It is important to note that case studies cannot be generalized across the larger population but may serve as a useful clinical tool to provide clinicians with illustrations of the many ways this diagnosis can present itself.

There are several case studies on ARFID found in the peer-reviewed literature that provide some insight on clinical presentation. Some of the primary examples include restricting food intake due to fear of choking or swallowing, fear of vomiting, gastrointestinal discomfort, generalized anxiety related to eating food, and sensitivities to food texture. For example, King, Urbach, and Stewart (2015) examined a case where an adult patient had a long-standing history of illness anxiety disorder, primarily difficulty eating for fear of gastrointestinal symptoms that she had experienced as a child with Crohn's disease. This patient developed the inability to eat, leading to significant weight loss. In another case example reflective of pediatric presentations, Bryant-Waugh (2013) described a case of a 13-year old boy with ARFID who primarily presented with limited range of foods accepted, and a history of very selective eating and lack of interest in food. Due to his limited range of intake, he was failing to make gains in his growth and development. It is clear how these two cases have very different clinical presentations despite the same diagnostic category.

In addition to the limitations regarding generalizability as represented in case study approaches, another concern related to studies on prevalence is the use of retrospective data collection when assigning patients to a diagnosis of ARFID. Due to the very recent addition of ARFID as a new diagnosis in the DSM-5, early studies reviewed eating disorder symptoms and reassigned the clinical diagnosis to match the new DSM-5 criteria. In other words, the

retrospective data was examined with the new criteria that was not in existence at the time of original diagnosis to see if criteria for ARFID would have been met.

Emerging Literature on ARFID subtypes

Norris et al. (2018) argue for building evidence for the use of descriptive subtypes in youth with ARFID. In their novel study, characteristics of patients with ARFID were examined in an effort to identify and describe subtypes of the disorder. A retrospective chart review was completed for patients aged eight to 17 over a 17-year period.

The authors examine three ARFID subtypes:

1. *ARFID – limited intake*. These children and adolescents had low overall appetite, lack of interesting in eating, and/or difficulty with the physical acts of feeding (e.g. small bite sizes, prolonged duration to finish meals, etc.). These youth had relative energy deficiency manifested by weight loss, medical compromise, and/or impairment resulting in inadequate weight gain for growth, or growth stunting.
2. *ARFID – limited variety*. These children and adolescents had histories of long-standing feeding issues (e.g., food neophobia, picky eating), sensory and/or texture issues, aversions related to food items, and/or profound rigidity involving the act of eating (e.g., food items on a plate cannot touch or brumotactilliophobia).
3. *ARFID – aversive*. These children and adolescents had histories of nutritional avoidance/restriction that occurred and/or evolved as a result of a specific anxiety, event or fear (e.g., fear of choking, pain, or nausea). (p. 171).

The results showed similar groupings of subtypes as described in the DSM-5, with the most frequent presentation of ARFID to be the aversive subtype, followed by limited intake, and then limited variety. The following table illustrates how the subtypes were broken down in this study sample:

ARFID subtypes	**Percentage of study sample (n=77)**
ARFID – limited intake	39% (n=30)
ARFID – limited variety	18% (n=14)
ARFID – aversive	43% (n=33)

Table 1. Adapted from Norris et al. (2018)

This information provides a foundation that highlights the importance of distinguishing different clinical presentations of ARFID and their prevalence by examining subtypes. Further exploration of the utility of specific ARFID subtypes is needed with larger sample sizes and across various treatment settings. In addition, further research is needed to better determine how use of subtypes can aid in diagnosis and creation of specific treatment interventions. The proposed treatment interventions in Chapter 5 will attempt to provide intervention examples across several clinical presentations of ARFID.

Emerging Literature on ARFID Treatment

Literature on treatment interventions for ARFID is just beginning to emerge. Through the many stages of the dissertation research process, it has been important to be aware of new

publications coming into print in real time. The following is a review of recent literature on ARFID.

Sharp et al. (2016) used an intensive, manual-based intervention in the first randomized controlled trial examining intensive behavioral feeding intervention for chronic severe food refusal in a day treatment setting. These investigators developed a manual-based and technology supported behavioral feeding intervention called Integrated Eating Aversion Treatment (iEAT). The manual was based on behavioral interventions including escape extinction, reinforcement procedures, and formalized meal structure and was paired with a touch screen data collection system (on iPads) to capture meal time performance. Parent training was also a component of this intervention, which is similar to FBT in AN. The authors recruited children ages 13 to 72 months who met criteria for ARFID. The participants were randomly assigned to the treatment (N=10) or placed on a wait list (N=10). Treatment involved 14 40-minute meal times delivered across five consecutive days with the parents in the role of the feeder. Results indicated high caregiver satisfaction and acceptability of the interventions and patients involved in the active intervention made clinically significant progress in their food intake as defined by decreased food refusal and increased oral intake. One limitation of this study was the small sample size (N=7 as participants dropped out) at the end of study as well as the active intervention vs. waitlist control group receiving no treatment. It is also difficult to generalize this study to older populations due to the young age of the participants.

The above intervention focused primarily on patients with pediatric feeding disorders who met criteria for ARFID, which are not entirely applicable to the older child and adolescent population. However, there is benefit in researching into the specifics of the behavioral interventions in the manual used in this study and will continue to be an area of

exploration. Despite high rates of comorbid anxiety disorders, none of the pediatric feeding interventions in the literature have incorporated CBT as a treatment modality (Fischer et. al, 2015).

Another recent case study in the literature describes a behavioral parent-training intervention for a child with ARFID. Murphy and Zlomke (2016) recount an intervention that integrates components from intensive feeding programs with parent-training strategies in the treatment of a six-year-old girl with ARFID. The authors outlined assessment measures of eating symptoms and completed observations before developing an appropriate treatment plan. An included table outlined the number of sessions with duration, goals for each session, and specific interventions. A hierarchy of food challenges and associated contingent reinforcements were broken down by session as well. For example, on the easier end of the hierarchy, eating a bite of Ritz cracker earned a trip for frozen yogurt. On the more difficult end of the hierarchy, eating a bite of hamburger earned a movie with Dad and access to screen time. The patient's family was included in the sessions and met with the authors individually for coaching sessions. The results of this intervention demonstrated a decrease in all clinically-elevated feeding difficulties to within normal limits. This outpatient parent-mediated behavioral intervention suggests promise for typically developing children with ARFID.

In addition to providing a clinical picture of presentation, the case studies on ARFID found in the literature also provide some guidance on assessment and treatment planning with this population. For example, Bryant-Waugh (2013) describes a case example of a 13-year old boy with ARFID who presented with limited range of foods accepted and a history of very selective eating. Individual factors that contributed to the development of symptoms were identified as anxiety, low self-esteem, and conflict within family dynamics. This case illustration

described the use of CBT combined with parental involvement. The author failed to provide details of the CBT intervention, including number of sessions and what constituted parental involvement. This patient remained extremely cautious around food after the intervention, but he was able to improve overall nutrition by agreeing to take a multivitamin supplement as well as adding additional foods into his diet. He demonstrated ability to utilize breathing techniques and progressive muscle relaxation to manage his anxiety around unfamiliar foods.

Another case study providing insight into ARFID treatment is found in King, Urbach, and Stewart (2015), who discussed an adult patient who had a long-standing history of illness anxiety disorder, primarily difficulty eating for fear of gastrointestinal symptoms that she had experienced as a child with Crohn's disease. This case was treated with cognitive and behavioral techniques, specifically psychoeducation, systematic desensitization, and cognitive restructuring. The psychoeducational component of this intervention included differentiating the physical symptoms of anxiety and the signs of gastrointestinal illness or choking. The treatment also included in vivo exposure during meal times where the patient was exposed to foods gradually according to the patient's self-developed graded fear hierarchy. Cognitive restructuring was utilized to help the patient identify evidence against her beliefs that gastrointestinal sensations would have negative or catastrophic outcomes. Relaxation training was used to help her cope with and adapt to perceived stress. The results of this intervention suggested that she could eat three meals with 70% to 100% consumption, her pre-meal anxiety remained below three out of 10, and there were noted improvement in cognitions, weight, and energy level.

Fischer, Luiselli and Dove (2015) evaluated the effects of an intervention that incorporated both a clinic as well as an in-home component in an adolescent with ARFID. The interventions included a cognitive behavioral component as an adjunct to behavioral

therapy. The adolescent was asked to rate his distress when eating on a 10-point scale (0=not worried, 10 = extremely worried). The cognitive behavioral techniques utilized were diaphragmatic breathing, relaxation strategies, visualization, positive self-talk, and identification and self-monitoring of negative thoughts and cognitive distortions. The authors concluded that this combination effectively increased food consumption and decreased anxiety related to foods. The identified patient was able to increase the amount and variety of accepted foods and these positive results were maintained post-treatment. While this study demonstrates a positive outcome, it is important for the results to be replicated for reliability in order to achieve the same outcome.

A recent case study by Fix, Proctor, and Gray (2016) focused on treating an adolescent with emetophobia, the fear of vomiting or of seeing others vomit. Although the individual in this intervention was not diagnosed with ARFID, the symptoms are similar to one of the ARFID sub-groups that present with difficulty eating due to fear of adverse consequences such as vomiting. The treatment employed in this case study involved ERP and included elements of CBT throughout treatment to challenge cognitive distortions. The exposures started off with exposure to audio files of coughing and burping as well as listening to the clinician say the word 'vomit' as well as other synonyms for the word vomit. The exposure then progressed to watching videos of others vomiting. During the time that the client was viewing these videos, she was not allowed to engage in avoidance behaviors such as leaving the room or looking away from the videos. The client was able to work through her own perceived gastrointestinal discomfort and recognized that the gastrointestinal discomfort of others did not necessarily mean that the person would vomit. The authors found that after termination of treatment the symptoms of emetophobia as well as panic attacks were significantly reduced. This suggests that CBT

including ERP can effectively reduce emetophobia symptoms, which are the main feature in some individuals with ARFID.

Most recently in the literature, Thomas, Brigham, Sall, Hazen, and Eddy (2017) reviewed symptom presentation as well as outlined their treatment intervention for a patient with ARFID. In this case, an 11-year-old girl presented with difficulty eating after a choking incident. After a piece of meat became lodged in her orthodontic expander, she developed an intense fear of swallowing and seven days after the incident she stopped eating most solid foods. By parent report she was always a picky eater and required coaxing to finish her meals. She disliked many foods which made family meals and social outings difficult due to lack of preferred foods. She was always at a lower weight compared to same-age peers. She denied any body disturbance or preoccupation. Medical causes for her symptom presentation were ruled out, including physiological reasons for her swallowing difficulties. This patient was given a diagnosis of ARFID.

Thomas et al. (2017) designed an individualized cognitive behavioral intervention based on empirically supported approaches for specific phobia (choking), eating disorders in patients with low weight, and selective eating. To address the phobia of choking, this intervention utilized an ERP model beginning with gradual exposure to feared foods. The patient created a food hierarchy starting with foods that would be least likely to cause choking, up to more difficult foods, and ending with the same type of meat that was involved in the choking incident. The following figure illustrates how easier foods progressed to more difficult foods:

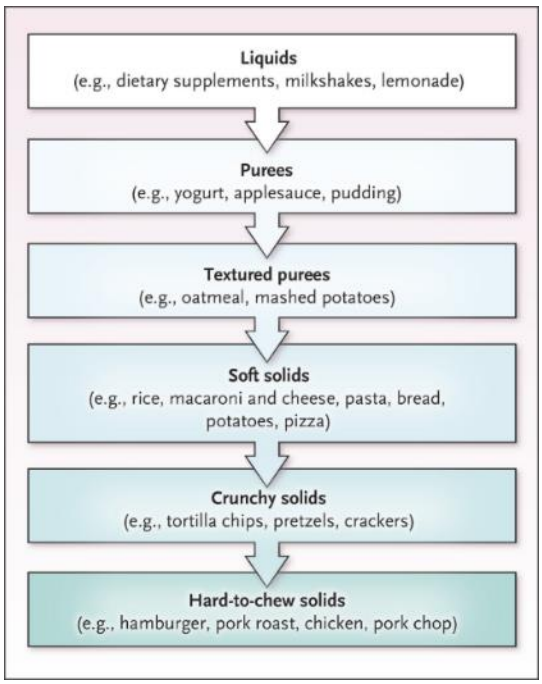

Figure 2: Thomas et al. (2017). Progression of Food Exposure in Patients with a Choking Phobia. http://www.nejm.org/doi/full/10.1056/NEJMcpc1616394)

As the patient completed the exposures, she was asked before and after completing five to 10 bites of food to estimate the likelihood that she would choke on a scale ranging from zero to 100. Thomas et al. (2017) found that the patient's ratings decreased across sessions and she was eventually able to eat the same food involved in the choking incident.

The second treatment goal was to restore weight. This was achieved by having the parents take charge of the refeeding process as well as increasing supervision similar to the treatment interventions in FBT (Lock & LeGrange, 2007). The family used firm but gentle pressure to encourage food intake. They began increasing the number of high caloric foods such as pasta and milkshakes that were also preferred foods for the patient. Thomas and her colleagues also utilized functional MRI scans to evaluate patient response to high caloric foods. Applying this information to the continuing development of ARFID treatment may offer insight into preferred foods and how this information can be used in treatment. This technology shows

pictures of foods that often cause pleasure such as high calorie foods as well as pictures of ordinary objects. In a normal healthy control, specific brain activity is elevated, but in this patient no difference was observed showing disinterest in palatable foods.

The third and final goal of treatment was to increase dietary variety. A tasting chart was created where the patient was able to earn one point for every new food tasted and was able to earn rewards for accumulating a certain amount of points. Thomas et al. (2017) found that at the end of treatment, the patient denied any fear of choking, was able to return to all previously consumed foods, and had gained 6.4 kg (14.08lbs). Her eating variety remained somewhat limited, but these limitations no longer affected her physical or psychosocial functioning. The intervention utilized by this team is inclusive of the evidence-based practices of ERP and FBT; however the treatment is lacking specific cognitive behavioral strategies to assist with the reframing of the distorted thoughts related to food avoidance.

When examining the cognitive behavioral intervention employed by Thomas et al. (2017) to address a patient's phobia of choking, it appeared to use elements of ERP as well as cognitive restructuring. These findings have important implications for emerging treatments of ARFID, but could better account for developmental considerations for children and adolescents who are presenting for treatment by adding child-friendly ways to identify, monitor and challenge cognition, such as expressive art therapy.

Although the literature on ARFID is continuing to grow, it can be concluded that certain aspects of the reviewed case studies, such as treating fear of vomiting, can be applied to the treatment of ARFID. The literature does review some specific interventions such as ERP and includes some elements of CBT. One limitation is that specific methodologies are not clear. There appears to be a common thread that the use of ERP can be helpful in the developing

treatment of ARFID. Some of the more recent interventions indicate the use of cognitive restructuring techniques to reframe cognitive distortions; however it is unclear how they are specifically utilized.

Novel Three-Dimensional Model of the Neurobiology of ARFID

In the most recent ARFID literature, Thomas et al. (2017) hypothesize a three-dimensional model of the neurobiology of ARFID. This model focuses on neurobiological abnormalities in sensory perception, homeostatic appetite, and fear responsiveness that underlie three of the primary ARFID presentations of sensory sensitivity, lack of interest in eating, and fear of aversive consequences, respectively. The following table breaks down this three dimensional model of the neurobiology of ARFID:

Presentation	Description	Proposed neurobiological underpinnings
Sensory sensitivity	Patients describe non-preferred food as tasting intensely negative	Oversensitivity in taste perception contributes to sensory sensitivity Supertasters – perceiving sweet and bitter tastes more intensely
Lack of interest in food or eating	Patients describe not feeling hungry at meal times, forget to eat, and feel full more quickly than others	Associated with difference in activation of the brain's appetite regulating centers. Hypothalamus- control center for integration of appetitive signals and anterior insula – houses primary taste cortex, integrates visceral signals and interoceptive experiences.
Fear of aversive consequences	Intense fear and avoidance following a traumatic experience with foods	There is a preexisting vulnerability in ARFID individuals that causes a phobic response to the traumatic event. Hyperactivation of defense motive system (amygdala anterior cingulate, and ventral prefrontal cortex)

Table 2: Three dimensional model of the neurobiology of ARFID

This model may provide some insight into possible etiology of ARFID, and the authors make the argument that determining these biological underpinnings may guide treatment by informing treatment approaches. For example, using ERP or systematic desensitization for individuals with sensory sensitivity, and possible use of appetite-inducing medication to help those with low appetite. This theory may help guide treatment in the pediatric population by providing an understanding of the etiology of ARFID with respect to brain function; however it does not look at the brain function in creating change that is required in the therapy process. Chapter 4 will examine how the brain is involved in the process of healing and change and how this may present differently in the child and adolescent population.

Thomas et al. (2017) developed a novel form of CBT for ARFID (CBT-AR) based on their proposed three-dimensional neurobiological model. This intervention is designed for use with patients over the age of ten and requires that the patients are medically stable, and do not have severe developmental disabilities or reliance on tube feedings. The premise of this therapy is that individuals with ARFID with the sensory sensitivity subtype perceive particular flavors such as salty or sweet more intensely than those who do not have ARFID. This model proposes teaching skills for approaching new foods in a stepwise fashion. The first step would be to look at the food, then touch the food, following by smelling the food, and eventually chewing the food. Their model of CBT-AR relies on the support of the parents to increase food intake for individuals who are underweight. CBT-AR also relies on exposures for managing phobic responses to traumatic experiences such as vomiting or choking.

There are four stages in this model: psychoeducation and regular eating stage; re-nourishment and treatment planning stage; addressing relevant maintaining mechanisms (i.e., sensory sensitivity, lack of interest in eating, and fear of adverse of consequences); and, finally,

relapse prevention. This treatment is designed to last approximately 20 sessions and takes approximately five months to complete.

There are many strengths to Thomas et al.'s (2017) approach of CBT-AR. This treatment model utilizes both in vivo and interoceptive exposures to address food fear and avoidance. In addition, this approach incorporates family involvement in treatment which has been demonstrated to be effective in the treatment of children and adolescents with eating disorders (Hildebrandt et al., 2012; Murray et al., 2015; Girz et al., 2013; Henderson et al., 2014; Forsberg et al., 2015). A limitation of this approach is that it does not specifically address the developmental needs of the child and adolescent in cognitive interventions utilized. There is also no mention of how this approach works with patients on the management of phobic responses to food exposure in terms of techniques or skills.

The authors are currently conducting an open trial of CBT-AR for youth ages 10 to 22. (Thomas et al., 2017). The results will be novel and will greatly inform the future treatment of ARFID. After looking at this intervention, it is important to examine the current evidence-based literature on eating disorder treatment and review how parts of these interventions can be applied to the developing treatments for the ARFID population. Doing so will assist in the recognition of the unique needs of young individuals with AFRID like Luke, and support the development of specialized interventions.

CHAPTER 2: EVIDENCE-BASED EATING DISORDER TREATMENT

Comparing ARFID with Other Diagnoses

As the literature on ARFID is continuing to emerge, it is useful to examine diagnoses that may present similarly or have similar comorbidities when considering treatment interventions that may be effective. The literature indicates that, in certain respects, patients with ARFID are similar to patients with AN and anxiety (Norris et al., 2014). The similarities between AN and ARFID are the restriction of food intake and anxiety about eating. However, the core features of ARFID are very clinically distinct from individuals with AN as there is no body image disturbance or fear of gaining weight or becoming fat.

Strandjord, Sieke, Richmond, and Rome (2015) conducted the first study to date that compared the course of treatment of ARFID with AN in a study of patients hospitalized in an inpatient medical setting for nutritional insufficiency. The authors compared the two groups at presentation, during hospitalization, and one year post discharge. This study revealed that psychiatric comorbidity was more than three times more common among patients with AN than among patients with ARFID. The authors defined "psychiatric comorbidity" as "other psychiatric diagnoses" (p. 677), not specifically anxiety disorders. This higher prevalence may be attributed to the fact that the setting was an inpatient level of care which implies higher degree of malnutrition with more potential psychiatric illness. The authors highlighted some similarities between the two diagnoses such as insufficient nutritional intake leading to low weight, and concluded that the course of hospitalization varied between the diagnostic groups. The patients with ARFID were younger, presented with fewer traditional eating disorder behaviors and less weight loss, and required longer hospitalizations than patients with AN.

Fisher et al. (2014) found that when retrospectively comparing patients ages 8- eighteen with ARFID to those with AN and BN (total n=712), those with ARFID (n=98) have a higher prevalence of anxiety disorders (58%). Fischer et al. (2015) posit that high rate of comorbid anxiety disorders makes CBT an appropriate adjunct to behavioral therapy. This supports the rationale of examining literature of evidence-based practices of these diagnoses when exploring possible treatment interventions for ARFID, and perhaps the treatment of ARFID can be informed by this literature.

Family Based Therapy (FBT)

Evidence supporting the effectiveness of family therapy in the treatment of eating disorders appears upon literature review. Eisler (2005) acknowledges that the first family therapy follow up study in AN was published by Salvador Minuchin, who stated that adolescents suffering from AN generally respond to treatment favorably and demonstrate a decrease in symptoms when the main treatment is family therapy (Minuchin, et al., 1975, 1978 as cited by Eisler, 2005).

FBT is a specific treatment for AN that is gaining an evidence base (Couturier, Kimber, & Szatmari, 2013). This intervention was originally developed at the Maudsley Hospital in London and is also known as "Maudsley family therapy" (Eisler, 2005 p.104); it was further developed and manualized by Lock and Le Grange (2013). FBT is characterized by a stance of indifference toward the origin of the eating disorder and views the parents of the adolescent as the primary resource in restoring their child back to health. The focus of this treatment is a parent-driven intervention that reestablishes healthy eating patterns and ultimately weight restoration. In this treatment the parents are viewed as the experts on their child and are in

complete control of determining how they will get their child to eat and restore them to a healthy weight. For example, the parents decide what food the child will be required to eat and sit with them until the meal is completed. The parents bring their child in for weekly therapy visits where weight is obtained. If the child is not gaining weight, the therapist assists the parents in determining what changes they need to implement to ensure that weight increases, e.g. the inclusion of very high calorie foods and limitations on any physical activity that may use energy. The control of food choices is gradually transitioned back to the adolescent once weight is restored (Lock & LeGrange 2013). Manualized FBT is used in outpatient settings and it has been recommended that there is a need for more research on adapting FBT to more intensive levels of care (Girz et al., 2013; Henderson et al., 2014; Murray et al., 2015).

Couturier et al. (2013) performed a systematic review and meta-analysis on the efficacy of FBT for adolescents with eating disorders. They scrutinized 12 randomized controlled trials and concluded that FBT was not significantly different from individual treatment for eating disorders at end of treatment with respect to weight restoration and reduction of symptoms. However, when follow-up data from six to 12 months was analyzed, FBT was superior to individual treatment in terms of maintained weight restoration. This evidence suggests that family involvement in treatment may lead to better long-term outcomes. One consideration related to FBT is that, anecdotally, not all families are able to tolerate this approach. FBT requires a high level of tolerance on the part of the parent to remain firm with expectations about eating despite complete refusal to eat on the child's part.

In a study by the National Eating Disorders Quality Improvement Collaborative (Forman et al., 2014), data including demographics, weight, and height from retrospective chart review was evaluated from 14 adolescent medicine eating disorder programs treating restrictive eating

disorders. The goal of the study was to compare demographic variables and outcome data between AN and ARFID. This study revealed that treatment modality was not predictive of weight restoration, with no significant differences between programs across groups. Contrary to other studies demonstrating relative efficacy of FBT, in this study the effects of FBT were not significantly better when compared with other treatments. One limitation of this investigation was that it focused primarily on weight restoration which is only one variable in the recovery process. Elimination of eating disorder thoughts and behaviors were not considered and should be in order to ascertain if the patient is making progress in cognitive symptoms outside of weight gain. The study also compared outcomes from multiple levels of care, including outpatient, partial hospitalization, residential treatment, and inpatient hospitalization.

It is also important to consider factors that may contribute to the effectiveness of FBT. Hildebrandt, Bacow, Markella, and Loeb (2010) posit that FBT may demonstrate efficacy in the treatment of eating disorders because it shares many commonalities with exposure therapy. The authors (2010) identify that anxiety is a central psychological feature of eating disorders, and that fear and worry can be successfully treated by ERP, a component of CBT. By giving control of re-feeding to parents, the child is naturally being exposed to his or her fears, i.e. food, without opportunity to avoid feared stimuli. Having the parents repeatedly present food and expect compliance serves as its own form of exposure. Steinglass et al. (2011) also write about the rationale for the application of ERP in the treatment of AN, pointing out the resemblance of fears in eating disorders to those in obsessive compulsive disorder and other anxiety disorders. The authors compare baseline anxiety features in eating disorders including avoidance behaviors and ritualized safety behaviors. The authors argue that continued exposure

to feared foods and situations around foods may be beneficial in preventing relapse of eating disorder symptoms.

One limitation of FBT is the importance of children and adolescents to have a "voice" in their treatment. In the family based model of treatment, the patient lacks this "voice", as the parents are completely in charge of what and when the patients eat until they are close to achieving their healthy goal weight. After this point, more of the control is gradually turned over to the child. Giving the patient a voice and control in FBT is complicated by the fact that these patients are often underweight and malnourished, and are not able to make appropriate choices for their health and wellbeing. One way to improve this helpless feeling may be to include the expressive arts in the development and deliverance of exposures, thereby giving the patient some control in a way that feels comfortable. For example, instead of listing foods on a hierarchy, the child could draw pictures of food exposures and use a metaphor of their choice (steps, ladder, Legos, or other preferred interest). Creating a colorful chart to keep track of successful exposures that reflects a child's interest may increase their willingness or interest in working through food exposures.

Another possible limitation to FBT is the lack of cognitive restructuring to identify negative thought patterns that lead to difficulty eating. FBT posits that when children and adolescents are malnourished, they are unable to make changes in their cognitions until weight is restored. Even if working on cognitive behavior skills is not as effective in a child who is malnourished, introducing these concepts could provide a groundwork for more intensive cognitive therapy as the patient becomes healthy. Moreover, FBT does not include a component that encourages expression of emotion nor does it utilize coping mechanisms for anxiety for the

child or adolescent. Expressive therapy could be used in addition to FBT to encourage expression of feeling as an outlet for coping and distraction.

Cognitive Behavioral Therapy in Eating Disorder Treatment

CBT is a common evidence-based intervention used in the treatment of eating disorders. (Agras, et al., 2017; Murphy et al., 2010). CBT can be seen as the integration of two separate strains of psychotherapy: cognitive therapy and behavior therapy. Dobson (2009) states that "at their core, CBTs share three fundamental propositions: 1. Cognitive activity affects behavior, 2. Cognitive activity may be monitored and altered, and 3. Desired behavioral change may be effected through cognitive change". (p. 4). One of the earliest forms of CBT was rational emotive behavior therapy (REBT) developed by Albert Ellis in the 1950's. REBT focused on identifying self-defeating thoughts and feelings, challenging the rationality of these thoughts and feelings, and replacing them with healthier beliefs. O'Donohue and Fisher (2012) explain that Ellis developed what he called the ABC personality system:

> In this system, A stands for activating event, B stands for beliefs, and C stands for consequences. The activating event is something that happens to a person (e.g., situations, thoughts, emotions). Almost immediately following A, an emotional reaction to that occurs (C); although individuals erroneously believe that A causes C, it is actually what one tells oneself about A (B) that causes C. (p. 111)

In the 1960s, Aaron Beck developed a system of CBT that was similar to Ellis. The premise of CBT is that how individuals think (cognitions) impacts how they feel (emotions) which in turn affects how they act (behavior) (O'Donohue & Fisher, 2012).

One goal of CBT is to assist individuals in changing their cognitive process by identifying distorted thought patterns. The following table reviews common cognitive distortions (Burns, 2006) that are addressed with the CBT approach:

Common Cognitive Distortions
• **All or Nothing Thinking** –an individual sees things in black-or-white categories • **Overgeneralizing** – an individual views a single negative event as a never-ending pattern of defeat • **Mental Filter**- an individual picks out a single negative detail and focuses on it exclusively so his vision of reality becomes darkened • **Disqualifying the Positive**- an individual rejects positive experiences by insisting they "don't count" • **Jumping to Conclusions** -an individual interprets things negatively with no facts ***Mind Reading***- an individual arbitrarily concludes someone is reacting negative to him ***Fortune Telling*** – an individual predicts things will turn out badly • **Magnification (Catastrophizing) and Minimization** – an individual exaggerates the importance of his problems and shortcomings • **Emotional Reasoning**- an individual assumes that negative emotions reflect the way that things really are • **Should/Must Statements** –an individual tells himself that things should be the way he hoped or expected them to be • **Labeling**- an extreme form of all or nothing thinking • **Personalization**- an individual holds himself personally responsible for an event that isn't entirely under his control

Table 3: Adapted from Burns (1989)

In more recent years, improved knowledge of the mechanisms involved in maintaining eating disorder psychopathology has led to the development of a specific form of CBT used to treat all forms of eating disorders in a variety of treatment settings and levels of care, termed CBT-E (E=enhanced). (Fairburn, Cooper, & Shafran, 2009) Dalle Grave, Ghoch, Sartirana, and Calugi, (2015) state that the data indicates that CBT-E is a viable and promising treatment option for adults and adolescents with AN.

Fairburn et al. (2009) conducted a randomized controlled trial of CBT-E that recruited 149 adult patients from two sites in the UK: Oxfordshire and Leicestershire. All the patients involved in the trial were >17.5 body mass index (BMI). Thirty eight percent of participants had a diagnosis of BN, and 62% of the participants had a diagnosis of EDNOS. The participants were randomly assigned to two different treatment groups of CBT-E. The first group (CBT-Ef) targeted eating disorder psychopathology exclusively while the second group was treated with a more complex form (CBT-E) which addressed additional problems, including mood intolerance, clinical perfectionism, low self-esteem, and interpersonal difficulties. Participants were also randomly assigned to these groups along with a group that began with immediate treatment and an 8-week waiting period (the control). The participants completed 20 weeks of treatment and a 60-week closed period of follow up. The results of this study indicate that the patients in the control condition experienced very little change in severity of symptoms, but the participants in the two treatment conditions demonstrated substantial change in terms of weight restoration at the end of treatment as well during follow-up. These results suggest the feasibility of treating a broad range of eating disorder patients using one of the CBT-E approaches. One limitation of this study was that it excluded patients with a diagnosis of AN. When extrapolating these results to the ARFID population, is it difficult to make comparisons as patients of low body weight were excluded and the participants were adults.

It is important to also examine how CBT-E works in the treatment of restrictive eating disorders like AN. Byrne, Fursland, Allen, and Watson (2011) aimed to examine the effectiveness of CBT-E in the first published trial of CBT-E to include patients whose BMI was less than 17.5, as the previous study focused on individuals with a BMI greater than 17.5. In this study, Byrne et al. (2011) recruited 125 patients who attended on average 20-40 individual CBT-

E sessions with a clinical psychologist. At the end of treatment, 32% of the total sample fulfilled the requirement for full remission, which was defined as complete absence of eating disorder symptoms in the last 28 days, including binge eating, purging and severe dietary restriction, thereby not meeting DSM-IV criteria for an eating disorder. An additional 8% met criteria for partial remission, defined as meeting all but one of the previously mentioned criteria. One limitation to this study is that lack of follow-up data, as the authors had limited success in getting a response from the participants to obtain such information. A second limitation the authors identified was that the therapist adherence to the treatment protocol was not directly measured.

CBT-E proposes important maintaining mechanisms in the presentation of eating disorders including clinical perfectionism, mood intolerance, core low self-esteem, and interpersonal difficulties which contribute to the development and continuation of eating disorder behaviors (Cooper & Fairburn, 2011). These identified maintaining mechanisms may not be as easily applied to the ARFID population as they are to other eating disorder populations. When considering using CBT-E for the adolescent population, Dalle Grave et al. (2016) state that CBT-E for adolescents with AN is essentially the same treatment as the adult form with identical steps, strategies, and procedures. This implies that adolescents and adults could benefit from the same treatment without considering the developmental appropriateness of treatment.

Exposure and Response Prevention (ERP) in the Treatment of Eating Disorders

One component of CBT for eating disorders is ERP. The goal of ERP is to assist individuals in changing their cognitive process by identifying distorted thought patterns. It begins by presenting an individual with a trigger they are fearful of in order to induce cognitive distortion and therefore increase an anxious response. It is imperative to have the individual “sit

with" or tolerate their anxious response without engaging in negative coping mechanisms (avoidance, rituals, etc.). As the anxiety is heightened, the goal is to simultaneously help the individual develop coping strategies to tolerate the exposure to the trigger. After repeated exposures to the trigger and creating this cycle of response prevention, the individual is better able to tolerate and manage anxiety, and eventually decrease the severity of the anxious response. This is achieved by decreasing the power of the negative cognitive distortions.

For example, when using ERP in the treatment of an individual with AN who has a fear of higher caloric foods and weight gain, the exposure may be eating a slice of pizza while reframing cognitive distortions, (i.e., 'one piece of pizza will not make me fat', 'my body needs this food for energy and healing') and at the same time helping them to implement positive coping mechanisms (i.e., breathing exercises, use of distractions). Similarly, using ERP as an intervention for someone with BN who has the urge to purge by self-induced vomiting after eating, would use food as an exposure and eliminate the ability to purge therefore increasing anxious response. The following figure illustrates how ERP may be applied to an individual with AN with a fear of eating pizza:

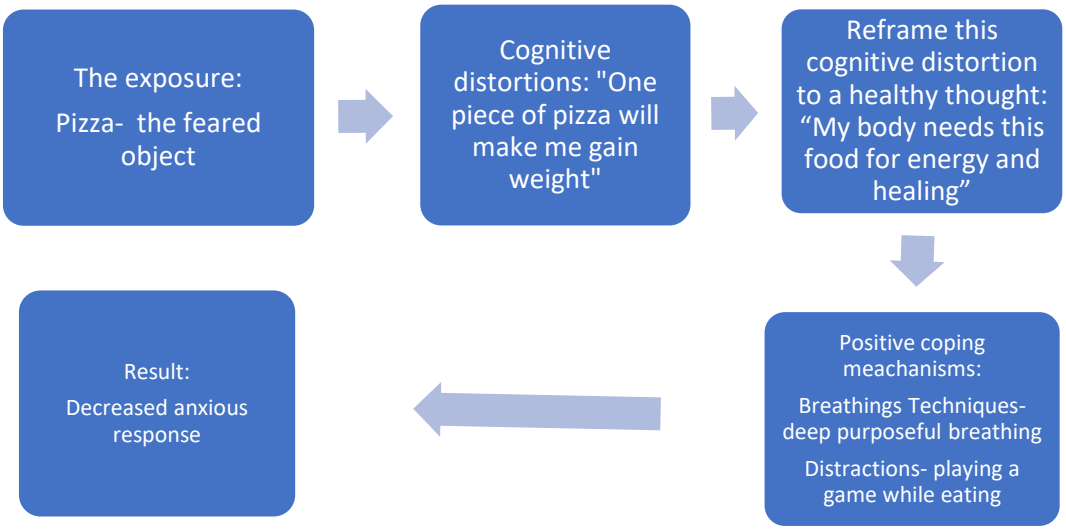

Figure 3: Example of ERP used with AN

When reviewing the emerging literature on ARFID, specific types of interventions applied to the disorder contain elements of ERP such as exposures to difficult foods presented in a hierarchy (Thomas et al., 2017). One limitation of ERP is that it is lacking developmental considerations for children and adolescents with ARFID, which will be discussed in more detail in Chapter 3.

Review of Literature on ERP for Eating Disorders

The literature examining the use of ERP in the treatment of eating disorders has focused primarily on AN and BN. ERP has been effective in the treatment of anxiety disorders, obsessive compulsive disorder, specific phobias, panic disorder, and post-traumatic stress disorder by reducing anxiety (Koskina, Campbell, & Schmidt, 2012). Steinglass et al. (2011) posit that the relationship between anxiety disorders and eating disorders, coupled with the success of ERP in the treatment of anxiety disorders, makes ERP a potentially beneficial

treatment for eating disorders, specifically AN. Furthermore, Steinglass et al. (2012) developed a brief ERP treatment intervention for AN and evaluated its effects in an open series. This intervention consisted of 12 individual 90-minute sessions three times a week for four weeks. In the initial session, the therapist worked with a patient on describing their feared foods and eating situations as well as avoidance and ritualized behaviors. Psychoeducation was provided on anxiety and the rationale of ERP. The next 11 sessions included exposures that followed the hierarchy of the patients identified fears over time. Although it was a small study of nine individuals, they noted that a change in anxiety was associated with greater caloric intake which supports an anxiety centered model of AN, therefore concluding that ERP can be beneficial in treating the anxiety associated with eating disorders.

It is important to consider how ERP could be applied to the treatment of ARFID as well as the potential ways that this intervention is lacking for use in this population. Children and adolescents with ARFID may benefit from ERP by decreasing fear of trying new foods, to begin to desensitize from particular textures, or to reduce feared outcomes such as vomiting or choking. Examining how ERP is utilized in the younger population is crucial. Herran, Freeman, and Garcia (2016) point out the importance of considering developmental modifications when using ERP to treat young children with obsessive compulsive disorder. As many individuals struggling with ARFID are young, considering development modifications when using ERP should also be imperative. The authors utilized a family-based CBT model using ERP with a seven-year-old boy whose primary compulsive behavior was handwashing.

To further examine the approach of Herran et al. (2016), three main principles were used to guide the delivery of ERP for younger populations. According to the authors, the first principal is family involvement with a focus on reducing family accommodation. Family

accommodation refers to the ways that family members assist or modify their own behaviors to accommodate the anxiety of the child, e.g., constantly using hand sanitizer themselves before interacting with their child. The second principal is achieving an understanding of the functional relationship between the client's obsessions and compulsions. The authors state that it is imperative to understand the relationship between the core fear and the ritual used to decrease or neutralize anxiety. The core fear cannot be assumed from the ritual. For example, hand washing may not be in response to fear of being contaminated by germs, but could be fear of causing harm to others. The final principal is creating conditions to facilitate habituation during exposure. Habituation refers to the process of gradual reduction in anxiety after several cycles of presenting a trigger that activates anxiety, while not allowing the patient to engage in behaviors that decrease anxiety such as rituals or avoidance.

The authors make a clear argument as to why these principles are especially important when treating young children with obsessive compulsive disorder, as the family is often engaging in accommodating behaviors that maintain symptoms. One could further evaluate how these principles might be applied to the treatment of young patients with ARFID and how to best meet the developmental needs of young patients. For example, the following is a case study from practice to illustrate possible difficulty with utilizing ERP in a young individual with ARFID.

A 12-year-old female “Lena” has been struggling with picky eating since an early age. Her parents note that when she was very young and first introduced to table foods, she was open to trying a variety of new foods. Around the age of five, Lena became increasingly picky and began to avoid meats and vegetables. Her selection of foods continued to narrow until she was exclusively eating the following foods: dry cereal, red apples, chicken tenders/nuggets, and a

specific brand of pizza. Lena struggled with texture issues and could no longer tolerate foods she described as "mushy" such as noodles, pasta, mashed potatoes, or foods that she described as "earthy" like carrots, lettuce, and peas.

During a subsequent medical appointment with her pediatrician, it was discovered that Lena had fallen off her growth curve, going from the 25th percentile to under the first percentile for her weight. Due to the impact her limited intake had on her growth and development, coupled with lack of fear of gaining weight or disturbance in body image, Lena was diagnosed with ARFID. She began treatment with an outpatient therapist to address issues of general anxiety and food anxiety, with the goal of improving her ability to increase food intake. The therapist attempted to work on food exposures, but the exposures were unsuccessful due to Lena's high level of anxiety when she was presented with an exposure. When presented with a feared food such as a piece of banana, Lena's eyes filled with tears. When prompted to try the food, she would begin to cry and hyperventilate. She was unable to use coping strategies to manage these symptoms. Through the course of this treatment, Lena was unable to make progress in managing her symptoms of anxiety and was not able to push herself to try any new foods.

Lena's family relocated and her parents again sought treatment for Lena's restrictive eating patterns after a six month break from treatment. Lena was evaluated by an adolescent medicine doctor and referred for another trial of outpatient therapy. Lena had a difficult time expressing thoughts and feelings related to her food avoidance and anxiety in session with the therapist. Food exposures were introduced on a chart, and were to be completed in bite size increments between sessions. Coping mechanisms to be utilized in conjunction with the exposures taught in therapy. At times, Lena was able to complete exposures in the therapy

session with the therapist. Lena was unable to complete any exposures in the home setting. When presented with exposures at home, Lena's parents described her as "shut-down" and they were not able to tolerate her distress in continuing to push the exposures. After a few attempts when Lena was crying and upset, parents would give up on attempting the food exposure and gave Lena her preferred foods.

One challenge of using ERP in the treatment of eating disorders is the difficulty that individuals experience tolerating exposures to anxiety-inducing stimuli. This can be especially true when trying to complete exposures as part of treatment in the outpatient setting, where an important part of continuing the therapeutic change is also to practice exposures as homework outside of the therapeutic setting. It may be difficult for patients to complete exposures at home without the support of the clinician. One aspect of resistance in making change in the eating disorder population is a fear of gaining weight. Patients with ARFID are usually not afraid to gain weight and this is less of a problem than would be seen in patients with AN. Patients with ARFID may have difficulty managing anxiety that comes with trying new foods, and family members may not be able to tolerate their anxiety in order to remain firm on completion of the exposure.

Although the research confirms that exposure therapy is efficacious, safe, tolerable, and bears minimal risk when implemented correctly, there are unique ethical considerations when utilizing exposure therapy in children (Gola, et al., 2016). For example, children are often entering treatment at the request or insistence of their families and may be resistant to exposures. Frequently the deliverance of exposures in therapy is manualized or rigid. Consideration of how to communicate with younger children should be important. Gola et al. (2016) provide a helpful example of using child-friendly language when discussing exposures. The authors use a child-

friendly analogy when comparing the process of ERP to "jumping into a cold pool and eventually feeling warm as your body acclimates" and stating to the patient, "facing anxiety-producing situations will be faced gradually, just like learning to swim by starting at the shallow end and gradually moving to the deep end as one becomes a better swimmer and feels more comfortable." (p.186). In addition to using more child-friendly language and metaphors in therapy, working with children and adolescent requires the ability of the clinician to be flexible. In strictly manualized treatments, this is difficult. A clinician working with children and adolescents needs to consider where the patient is developmentally, and have the ability to alter treatment interventions to fit these developmental needs.

The current treatment climate stresses the importance of utilizing evidence-based practice as demanded on both micro and macro levels. Insurance companies are requiring their providers to utilize evidence-based interventions in order to be reimbursed for treatment. It is important to examine how this impacts the treatment of children and adolescents. While evidence-based practice has been demonstrated to be effective, the approach is often manualized, resulting in a rigid intervention without room for adjustment for the younger patient. This dissertation is proposing a paradigm shift that incorporates the foundations of evidence-based practice treatment for children and adolescents, while focusing on interventions that have a gentler and more developmentally appropriate approach.

CHAPTER 3: CHILDREN AND ADOLESCENT DEVELOPMENT

Although ARFID can present across the lifespan (APA, 2013), a large percentage of individuals presenting for treatment of ARFID are children and adolescents (Norris et al., 2014). This chapter will examine theories of development and will critically evaluate the developmental appropriateness of current treatment interventions when treating the child and adolescent population. The developmental needs will be viewed through a global lens with the perspective that different age groups have varying developmental needs across ages and stages of development.

Developmental Theory

When considering children and adolescents as a unique population, it is critical to examine cognitive development, or how thinking changes over time. Noting that the field of development includes a broad range of topics and differing perspectives, Bjorklund and Causey (2017) posit that there are six "truths" to cognitive development:

1. Cognitive development proceeds as a result of the dynamic and reciprocal transaction of internal and external factors;
2. Cognitive development is constructed within a social context;
3. Cognitive development involves both stability and plasticity overtime;
4. Cognitive development involves changes in the way information is represented;
5. Children develop increasing intentional control over their behavior and cognitions; and

6. Cognitive development involves changes in both domain general and domain specific abilities. (p. 9)

These six assumptions highlight the influence of many factors that contribute to the process of cognitive development, as well as how these factors intertwine. There is not one specific universal path of development when examining the child and adolescent population. It is crucial to appreciate the complexity of this process and that it is not easily explained solely by one theory of development. One of the most prominent theories of cognitive development is the theory of Jean Piaget (1973). Examining the work of Piaget provides a broad understanding of cognitive development of children and adolescents. Piaget described and explained changes in logical thinking in the development of children and adolescents, and proposed a stage-based model of development where children progress through stages during which specific developmental tasks are mastered. Piaget's four stages include the sensorimotor period, the preoperational thought period, the concrete operations period, and the formal operations period. The following table outlines these stages along with ages in which they typically occur and a description of what takes place developmentally in each stage.

Piaget's stages of intellectual (or cognitive) development		
Stage	**Age**	**Description**
Sensorimotor	Birth through ages 18-24 months	• An infant progresses from reflexive actions at birth to the beginning of symbolic thought • The infant develops understanding of the world by coordinating their sensory experiences with their physical actions

Preoperational	Toddlerhood (18-24 months) through early childhood (age 7)	• The child begins to represent the world with words and images • Words and images lead to increased symbolic thinking • Thinking goes beyond the connection of sensory information and physical action • Children have difficulty taking on the perspective of others
Concrete operational	Ages 7 to 12	• The child now has the ability to reason logically about concrete experiences, thinking is not abstract • Children are more able to take on the perspective of others
Formal operational	12 through adulthood	• The adolescent reasons in more abstract and logical ways. • Emerging ability to be introspective about their thought process

Table 4: Piaget's stages of intellectual or cognitive development

As this table outlines, the first major stage is the sensorimotor stage, lasting from birth to approximately two years of age. In this stage, an infant's intelligence and experience of the world is limited to their own experiences and actions – both sensory and motor. In the sensorimotor stage, an infant progresses from an action based to symbol based intelligence. For example, an infant will accidentally discover and then repeat pleasurable experiences like sucking her thumb, or kicking her legs. The second stage is the preoperational stage and encompasses age two to age seven. In this stage, the child's intelligence becomes more symbolic and is expressed in different ways, such as language and imagery. During this stage, thought is egocentric, meaning that children have difficulty taking the perspective of others. The third stage is the concrete operational stage, ages seven to 12 years. In this stage, a child's intelligence becomes more symbolic and logical. The child's thought process becomes less egocentric and children are more

able to acknowledge the perspective of others. In this stage, a child's thinking is limited to concrete experiences, such as something they have experienced in the past and their thinking is not abstract. In the fourth and final stage, the formal operations stage from 12 to adulthood, children are finally able to be introspective about their own thought processes and begin to think abstractly (Bjorklund & Causey, 2017).

In terms of this stage model, Piaget (1973) stated that there is "a constant order of succession…. That is, in order to reach a certain stage, previous steps must be taken….thus we reach a hierarchy of mental structures which are built in a certain order of integration." (pp.10-11). This part of Piaget's theory assumes that all children follow the same developmental trajectory. One important limitation to Piaget's theory is that it does not consider other factors that may contribute to a child's development, such as intelligence, socioeconomic status, history of trauma, and gender, among others. Piaget's theory also does not account for differences in learning, nor does it look at development as part of a social construct. When looking at development through Piaget's lens, it is important to examine how cognitively appropriate certain therapeutic interventions such as CBT would be at each stage.

There are limitations when applying Piaget's stage model to a young individual with ARFID. The child may be in the process of moving from the concrete operational stage into the formal operational stage. In the concrete operational stage, the child's cognitive process becomes more symbolic and logical. The child then moves into the formal operations stage where the child is able to begin to think abstractly as well as to think about their own individual thought process. Examining individuals with ARFID through a stage model does not take into account the variance that may occur as that child is progressing through each stage. To further illustrate, Piaget's stage model would assume that a 13-year-old child is in the formal operational

stage and is able to think abstractly as well as to be aware of her own thought process, when in fact the individual may still be in more of a concrete operational stage and struggle with the cognitive demands of CBT, where the ability to be introspective about your thought process is essential.

In addition to Piaget's theory, it is helpful to examine another developmental theory of cognition that may fill in gaps that Piaget's theory is lacking. Lev Vygotsky's (1978) theory of cognitive development stresses the fundamental role of social interaction in the development of cognition. Vygotsky states that social learning precedes development and argues that learning is a necessary process of cognitive development. This theory can be applied to the concept of therapeutic processes as teaching. For example, the process of CBT is the clinician essentially teaching the child/adolescent to identify and reframe their distorted thought process as described in Chapter 2. Vygotsky identified the Zone of Proximal Development (ZPD) as one of the main components of this theory. This concept relates to the area of potential development that each individual can reach with the guidance, modeling, and encouragement from adults or in collaboration with more capable peers (Goswami, 2011). The following image illustrates this concept:

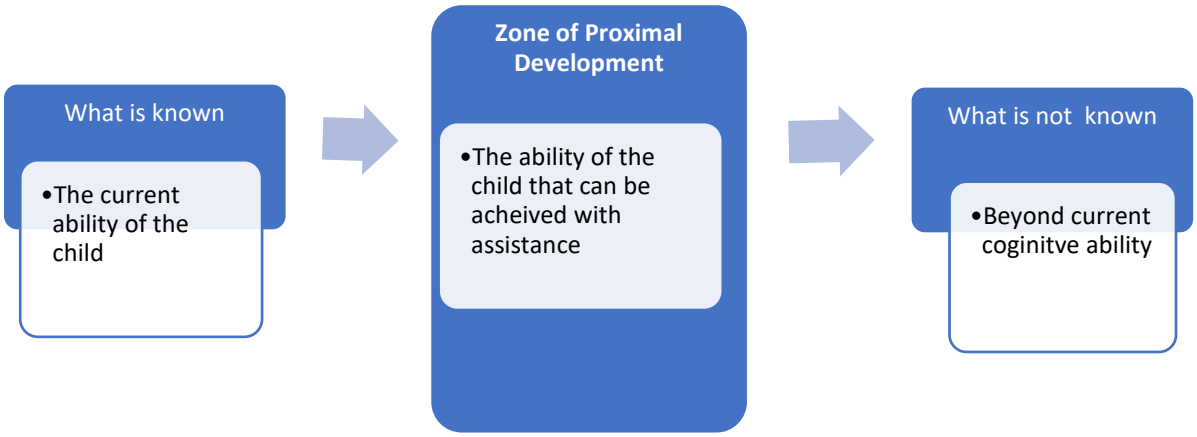

Figure 5: Vygotsky's Zone of Proximal Development

In the figure above, what is known – or the current ability of the child – must first be taken into account. After assessing what is known and then assessing what is not known, or what is beyond the current cognitive ability of the child; the ZPD can be identified, where the ability of the child can be increased and achieved with assistance. The concept of ZPD brings to mind the process of therapy and the relationship between the clinician and the patient. The process of therapy can be seen as guidance and modeling of therapeutic skills with encouragement from an adult (therapist). When applying the ZPD to the ARFID population, the child may be presenting for treatment with extreme fear and anxiety related to food. It may be beyond the child's current cognitive ability to identify and reframe distorted thoughts independently. However, with the aid of a clinician, the child may begin to apply cognitive behavioral strategies to their own thought process which would be the ZPD.

Looking at the part of this theory that includes collaboration with more capable peers may also make an argument for conducting CBT in a group setting. As children are learning how to identify and reframe cognitive thought processes, it can be helpful for them to observe their peers in this process, which may assist them in recognizing their own distorted thoughts. Additionally, observing peers engage in the act of reframing thoughts serves as a model and example for young people who are new to the therapeutic concepts used in CBT.

There are some limitations to Vygotsky's theory when applied to the ARFID population. It does not take into account the particular learning style of the individual nor does it take into account motivational factors. It is important to remember that many children and adolescents presenting with ARFID are extremely fearful of making changes to behaviors surrounding food. It is important to consider motivational factors when looking at the ZPD as a child who is more resistant would not be as receptive to the teaching of skills by the therapist. Another limitation to

Vygotsky's theory is there is very little description of the framework used when examining various developmental levels as well as the child's age.

There are several differences between Piaget's theory and Vygotsky's theory. First, Piaget believed that children and adolescents proceed through development through a set stage model and Vygotsky believed that the process of cognitive development is continual. Vygotsky's theory places more emphasis on culture impacting cognitive development, meaning that cognitive development can vary across cultures. While Piaget believed that cognitive development comes from the individual explorations of children and this leads them to construct knowledge from their own experiences, Vygotsky suggested that the child's environment largely impacts how they think. Piaget's theory was that thought precedes language, while Vygotsky viewed thought and language as distinctly separate systems that merge together around the age of three thereby creating verbal thought or inner speech. Vygotsky believed that cognitive development resulted from an internalization of language. Both of these theories provide valuable insight into cognitive development, and the combination of these theoretical approaches provides a more thorough perspective when looking at how cognitive change can take place in the treatment of children and adolescents.

CBT as a Treatment Approach

As discussed in Chapter 2, CBT is a common evidence-based intervention used in the treatment of eating disorders. Kendall and Panichelli-Mendel (1995) posit that some of the characteristics of CBT that make this intervention so common is the emphasis on teaching coping skills, promoting self-control, and enhancing self-efficacy. Other key factors that

contribute to the popularity of the use of CBT in children and adolescents is that this approach is evidence-based, goal-directed, and is designed to be a relatively short intervention.

Benjamin et al. (2011) argue that the growing empirical support for CBT does not guarantee its use. This is also important when examining the role of CBT in the treatment of eating disorders and how it can be applied to the treatment of ARFID. "Bridging the gap" between research, evidence, and clinical practice is an endeavor requiring effort from all parties involved, including researchers, practitioners, policymakers, and mental health consumers (Benjamin et al., 2011). A goal of this dissertation is to "bridge the gap" between evidence-based practice and utilization of approaches that are developmentally appropriate for children and adolescents with ARFID.

Developmental Appropriateness of CBT

Examining the cognitive development of children and adolescents prompts speculation on how children and adolescents might respond to CBT according to their developmental level. Grave and Blissett (2004) question the appropriateness of utilizing CBT in young children while examining the cognitive demands that are expected in the CBT process. The authors summarize the relationship between developmental psychology and CBT as:

> (1) in practice, CBT with children needs to take into account the developmental stage of the child;
>
> (2) CBT needs to be integrated with a developmental approach, and;
>
> (3) specific areas of concern for CBT and children exist as a result of both children's inability to conceptualize certain issues at certain ages and specific deficits, which may

> have brought the child to the attention of the mental health service and also preclude or limit their participation in the more complex cognitive aspects of CBT. (p.400)

Understanding where a child or adolescent is according to their development is imperative in the implementation of specific treatment approaches. When applying this concept to individuals with eating disorders including ARFID, assessment of developmental functioning level will guide the approach to the child.

While the literature demonstrates efficacy of CBT with a range of disorders, it is unclear to what extent the age and developmental level of the child affects treatment outcomes (Spence, 1994). One fundamental tenet of CBT is causal reasoning, or understanding that there is a causal relationship between cognitions and behavior. When looking through a developmental lens using Piaget's stages, this ability would take place in the concrete operational stage (ages 7 –12), assuming that the child is following the specific developmental trajectory. This does not take into account that the child may have yet to master this cognitive process, therefore making this causal relationship between thoughts and behavior more difficult.

When examining CBT through the lens of Vygotsky's theory of cognitive development, it is helpful to think about the process of the therapist teaching CBT as a skill to the patient. For example, depending on the developmental level of the child, the process of thinking about how they're thinking (or metacognition) is not always present. Piaget's theory of development states that in the concrete operational stage age of seven to 12, the child has the ability to reason logically about concrete things they have experienced and have difficulty with abstract thinking. It is not until the formal operational period from adolescence to adulthood where the adolescent is able to reason in more abstract and logical ways. The adolescent is not able to be introspective

about their thought process until the formal operational stage. Being introspective about thought process is one of the main tenets of CBT. However, when utilizing Vygotsky's perspective, the therapist can work on teaching metacognition as a specific skill. Perhaps this is where the use of expressive arts can increase the ZPD, or the level of cognitive ability that can be achieved with assistance. It is the role of the therapist to break these therapeutic concepts down in a concrete way that is easily processed by the patient.

In practice, CBT with children may benefit from taking into account the developmental stage of the child. The specific area of concern for the use of CBT in children is the inability to conceptualize certain issues at certain ages. Children as individuals may also have specific deficits which may preclude or limit participation in the more complex cognitive aspects of CBT (Grave et al. 2004). Thus, a child's developmental level should also be taken into account when utilizing CBT with the ARFID population.

To further illustrate this point, one might consider the case of "Sophia". Sophia is an 11-year-old girl who presents for treatment with an intense fear of choking that began after learning in school about how to respond to choking emergencies. Sophia was shown a video in her health class that depicted someone choking and being rescued with the Heimlich maneuver. She was disturbed by this video and began worrying about what would happen if she choked or if someone else choked in her presence. Sophia became anxious while watching others eat for fear that they might choke. She began to chew her food very slowly and take smaller bites, and warned her younger siblings to chew their food more thoroughly. Sophia's anxiety continued to rise and eating became increasingly difficult. Sophia began avoiding certain "hard" foods like pretzels and granola bars, and was limiting herself to softer foods like applesauce and yogurt.

Her food intake gradually decreased in amount and variety over the next few weeks. Her parents noticed that she was starting to lose weight and decided to seek medical advice.

Upon presentation to the outpatient treatment setting, Sophia's only oral intake was PediaSure (a liquid nutritional supplement) that was recommended by her pediatrician, plain yogurt (with no fruit or texture), and plain chocolate bars. Sophia's anxiety was so high, she began to have difficulty swallowing her own saliva, which led to holding saliva in her mouth and frequently spitting into a sink or trash can. She also carried tissues in her pockets due to the frequency of feeling she needed to void saliva instead of swallow it. Sophia described a tight feeling in her throat and the sensation that she was going to choke.

From a CBT perspective, Sophia would be encouraged to identify unhelpful thoughts such as "I am going to choke" and work to challenge and reframe these thoughts into more healthy thoughts such as "if I chew my food carefully and eat slowly, I will not choke." From a developmental perspective, Sophia has difficulty thinking about her throat in an abstract way. Sophia describes a tightness in her throat which becomes worse when she tries to swallow. According to Piaget's developmental stages, at age 11 her cognitive processes do not allow for abstract thinking, and she is acting through her concrete experience, "I feel like I am choking, so this must be true". In other words, Sophia believes that she actually *is* choking. As her anxiety about choking becomes worse, so does the tightening sensation that she experiences in her throat, reinforcing her experience and belief that she is choking. Detailed interventions that may be helpful to Sophia are outlined in Chapter 5. They would take into account her developmental level according to Piaget's stage model as well as utilizing Vygotsky's ZPD by providing psychoeducation on stress, the function of the esophagus, and ways to work on cognitive restructuring.

In addition to examining how learning impacts development, it is important to also look at the role that neurobiology plays in the development of children and adolescents. Current literature is gaining momentum with its focus on the role of neurobiology in understanding child development. Lefmann and Combs-Orme (2013) argue for integrating neuroscience into Piaget's theory of cognitive development and posit that understanding how the brain develops has application not just to theory, but to practice as well. This is particularly relevant to treating the child and adolescent population. When examining normal brain development, the human brain is dependent upon both genetic information and external stimulation during the early years of life. The basic circuit of the brain is established during the first two years of life. As the child grows and is subjected to various environmental experiences, both positive and negative, the brain continues to evolve. During development there are certain windows of opportunity for the development of specific parts of the brain which can be compromised if not activated correctly (Kloer, 2005). Reflecting on Sophia's developmental level through Piaget's lens alone, does not take into account her early development and individualized experiences that have contributed to her brain development.

In conclusion, when working with children and adolescents it is beneficial to consider how to creatively deliver forms of CBT that will harmonize with the developmental course of this population. Lefmann and Combs-Orme. (2013) suggest that social work's focus on evidence-based practice demands the incorporation of neuroscience into the social work profession's body of knowledge. This dissertation will attempt to contribute to this body of literature by examining the role of neurobiology and how it can provide a more thorough perspective through which to develop possible treatments for ARFID. More specifically, the pairing of neurobiology with evidence-based interventions such as CBT will be explored in

detail in Chapter 4. The following chapter proposes the utilization of art in therapeutic interventions and examines how the expressive arts can be a developmentally appropriate adjunct for treating children and adolescents with ARFID.

CHAPTER 4: EXPRESSIVE ARTS THERAPY

"My nervous system trying to connect and communicate with your nervous system, my heart to your heart, my brain to your brain – that's what we are doing when we are making art" (Kapitan, 2014, p.50). This quote powerfully describes the emotional connection that art can help to facilitate between patient and clinician. To further illustrate this, consider the case of Lena from Chapter 2. Lena had difficulty expressing her thoughts and feelings related to trying new food exposures. The following image was created by Lena in a therapy session when she was struggling to verbalize how she was feeling and was prompted to create a picture to show her feelings.

Figure 5: Prompt: "Draw how you feel about (new food exposure)?"

In this picture Lena depicts herself sitting on the ground with her knees pulled to her chest and her head down. The ground appears to be swirling underneath her, and a transparent cage is seen coming down over her head. In the background to the right, is the word "stress". Although Lena has been unable to verbally express her anxiety related to foods, her artwork depicts a vivid picture of how she experiences these anxious feelings. Creating this image allowed for self-expression of her experience without using words. For the clinician working with Lena, the emotions she is feeling become apparent as Lena used art as a form of expression to communicate her emotions. Other children like Lena, or with other challenges to being treated by CBT alone, can be assisted through expressive therapies as an adjunct. This chapter will define expressive therapy for the purpose of this dissertation and explore how neurobiology informs the inclusion of art in therapy. This chapter will argue for the use of art to enhance the language of therapy, making it more engaging and perhaps more effective for children and adolescents with ARFID.

The Expressive Therapies Continuum (ETC)

The theoretical concept of the Expressive Therapies Continuum (ETC) was introduced in 1978 and was developed by Kagin and Lusebrink (Hinz, 2009). This continuum strives to classify interactions with art media or other experiential activities in order to process information and form images. Graves-Alcorn and Green (2013) explain that the Expressive Art Therapies Continuum can be broken down into four separate disciplines – art therapy, music therapy, drama therapy, and dance therapy. For the purpose of this dissertation the term "expressive therapy" will refer to the specific discipline of expressive art therapy. Graves et al. (2013) define art therapy as follows:

> ...sometimes called creative arts therapy or expressive arts therapy, encourages people to express and understand emotions through artistic expression and through the creative process. Art therapy provides the patient/artist with the critical insight into emotions thoughts and feelings. Key benefits of the art therapy process include: (a) self-discovery, (b) personal fulfillment, (c) empowerment, (d) relaxation and stress relief, and (e) symptom relief and physical rehabilitation. (p.2).

ETC describes the restorative dimensions of various expressive experiences and the restorative power of creativity (Hinz, 2009). The following table outlines the levels in the ETC and summarizes how they are linked to functions in the left and right hemispheres of the brain.

The Expressive Therapies Continuum

	Left hemisphere	Right hemisphere	
Kinesthetic/ Sensory Level	Kinesthetic	Sensory	Represents the simplest form of information processing.
Perceptual/ Affective Level	Perceptual	Affective	Processing and image formation. Information processing may or may not need words.
The Cognitive/ Symbolic Level	Cognitive	Symbolic	More complex and sophisticated. Requires planning, cognitive action and intuitive recognition.
The Creative Level	Uses both hemispheres		Can occur at any single level of the ETC, or can represent the integration of all levels of functioning.

Table 5: Adapted from Hinz (2009)

ETC can provide a framework for working with patients on a developmental hierarchy similar to Piaget's (1973) developmental stages as discussed in Chapter 3. Experiences on the Kinesthetic/Sensory level characterize very basic information processing, for example information is taken in from the senses, through movement, as well as internal and external sensations. This is reminiscent of Piaget's sensorimotor stage where the infant learns about the world by coordinating sensory with their physical actions. The second level of the ETC developmental hierarchy occurs on the Perceptual/Affective level. In this level, processing may or may not need words, and information processing is expressed in images where specific form in not necessary. This stage can be compared to Piaget's preoperational stage where the child begins to represent the world with words and images and demonstrates an increased ability to think symbolically. The Cognitive/Symbolic level is more complex and requires planning, cognitive action, and intuitive recognition. This level is similar to Piaget's concrete operations and formal operations where children have the ability to reason logically and take on the perspective of others. Eventually, reasoning becomes more abstract and logical and the adolescent demonstrates the ability to be introspective about their thought process. The final level in the ETC is the Creative level which may exist at any or all levels of the continuum and is viewed as a synthesis of the other three levels of the continuum (Hinz, 2009). The ETC provides direction, but does not dictate or require a specific course of treatment. It allows for individual differences which supports different clients at their own developmental level. This flexibility to meet an individual where they are developmentally is precisely what makes ETC an appropriate and useful intervention for children and adolescents.

Brain Functions and the Arts

Utilizing images in the form of art can be a powerful addition to the therapy process. Per Riley (2001), "[i]magery taps into a person's earliest ways of knowing and reacting to the world; therefore, it is not foreign to the experience of learning. Art as a language of therapy, combined with verbal dialogue, uses all of our capacities to find a more successful resolution to our difficulties" (p. 54). Art therapy can be strongly tied to the goal of helping build mental health through reconfiguring and rebalancing brain functions. The literature supports the use of art therapy in treating a variety of mental health disorders including depression, schizophrenia, post-traumatic stress disorder, and borderline personality disorder (Van Lith, 2016).

When examining the core principals of art therapy, Waller (2006) identifies the fundamental principles of art therapy as:

> 1. Visual image making is an important aspect of the human learning process; 2. Art made in the presence of an art therapist may enable a child to get in touch with feelings that cannot easily be expressed in words; 3. The art can act as a 'container' for powerful emotions; 4. It may be a means of communication between child and therapist; and 5. It can serve to illuminate the transference" (p.271).

When thinking about how the brain is impacted by the utilization of expressive arts in therapy, it is crucial to have an understanding of how the brain responds to art. Lusebrink (2004) states:

> The process of expression through art media and the products created in an art therapy session are perceived predominantly through the tactile-haptic and visual sensory and perceptual channels and then are processed for their affect, associations, and meaning

> through cognitive and verbal channels. These activities involve different motor, somatosensory, visual, emotional and cognitive aspects of information processing with the activation of the corresponding neurophysiological processes and brain structures. (p.125).

This process is extremely layered and complex. For the purpose of this dissertation, basic brain structures and functions that support the use of expressive art in therapy will be reviewed. There are several main areas of the brain that are involved in expressive art therapy. The two hemispheres (right and left) have clearly distinct and different functions, but in typically functioning individuals these two hemispheres are integrative. The left hemisphere of the brain is involved in analytical and consecutive processes, processing of verbal information, and control of serial movements. The right hemisphere deals predominantly with intuitive and syncretistic processes in a parallel manner and processes visual-spatial information, visual imagery, and visual memory (Lusebrink, 2004). Creative experiences have the potential to integrate information from both hemispheres of the brain. Expressive therapy provides a way to conduct therapy in a language that the right hemisphere speaks and assists in connecting to the limbic system which is responsible for the experience and expression of emotion (Hinz, 2009; Lusebrink, 2004; Malchiodi, 2003).

There may be several benefits to using art within the session when working with children and adolescents. Art can be used to tap into the body's relaxation response. For example, drawing is hypothesized to facilitate children's verbal reports of emotionally laden events in several ways. This is achieved by reducing anxiety, helping the child feel comfortable in the therapeutic environment, increasing memory retrieval, organizing narratives, and prompting the child to provide the clinician with more details than they would in an interview which is primarily verbal (Malchiodi, 2003).

Engaging in expressive art during therapy can have a calming effect on the participant. To understand this, it is helpful to examine how the brain is impacted when an individual engages in the art-making process. Kruk, Aravich, Deaver, and deBeus (2014) conducted a preliminary experimental study examining the brain wave frequency patterns of participants engaged in two different types of art: drawing and clay sculpting. The objective of their study was to gain understanding of brain activity that occurs when an individual is drawing in response to a directive as well as using ceramic clay to freely sculpt something without a directive being given. The authors utilized the electroencephalogram (EEG) to record brainwave activity while the participant was engaging in the art activities. They focused on the areas of the brain involved in art making. The results indicated that both the activities of clay sculpting and drawing increased gamma power in the right medial parietal lobe, compared to general movement. Given that that the right medial parietal lobe is involved in -regulation, memory, and relaxation, these functions may also be activated when making art. The authors recognized limitations to their study, including discrepancies in the imaging that may have influenced outcome.

In another study, Belkofer, Van Hecke, and Konopka (2014) examined how materials used in art therapy affect the brain and its neurobiological functioning using EEG to measure residual effects after 20 minutes of drawing with oil pastels. The results suggested that the alpha rhythm plays an important role in drawing. The alpha rhythm is also associated with self-regulation, relaxation, memory, visual processing, intelligence, and creativity. This study had a sample size of ten participants, six of whom identified themselves as artists with some artistic training and four who were non-artists. The study did not find any significant differences on the brain wave activity between the self-identified artist and the non-artist which suggests that there does not need to be artistic training or talent in order for individuals to achieve the same benefits

of engaging in art. The results indicated that drawing for 20 minutes would produce two significant differences between pre and post drawing EEG readings. The authors (2014) posited the association with states of relaxation that are induced by art therapy, suggesting drawing may provide relief from "distressing states of anxiety and hypervigilance and therefore decreased cortical arousal associated with induced Alpha rhythm" (p.58). This suggests that even utilizing art within a therapy session can decrease anxious response and perhaps increase ability to participate in other therapeutic tasks such as cognitive restructuring or ERP. Given these findings, children and adolescents with ARFID may benefit from the use of art in therapy as an adjunct to make the therapeutic atmosphere more comfortable. As discussed in Chapter 2, exposures can be beneficial in the treatment of ARFID, but may also create a high level of stress and anxiety which would benefit from the states of relaxation that can be induced by the inclusion of art-making in the therapeutic process.

Rationale for Incorporating Art into Cognitive Behavior Therapy (CBT)

As reviewed extensively in Chapter 3, CBT is an evidence-based practice that is used in the treatment of eating disorders. As the majority of individuals presenting for treatment of ARFID are younger, it is important to consider to what extent children and adolescents can benefit from CBT due to level of cognitive development. Quakely, Coker, Palmer, and Reynolds (2003) attempted to establish the extent to which CBT can be used with children. The authors hypothesize that children have difficulty managing abstract concepts and understanding the relationship between thoughts and behaviors due to cognitive immaturity. The inclusion of art in the therapy process may help to bridge this gap, providing a developmentally appropriate adjunct to the cognitive demands of CBT.

CBT calls for individuals to identify their negative thought process and reframe or change these thoughts into positive ones. This process necessitates a level of cognitive and verbal ability that may be difficult for some children and adolescents. CBT also relies on the process of metacognition, which is the process of thinking about one's own thought process. CBT also requires individuals to think about their thoughts and feelings in an abstract way which can be a challenge for children who utilize more concrete thinking as evidenced by cognitive developmental stages according to Piaget.

Creating artwork as part of the therapeutic intervention requires children and adolescents to engage more actively in their treatment. Therapy seems to be less intimidating and more relatable if it includes art because art is a developmentally comfortable language for most children and adolescents (Malchiodi, 2003). The process of creating art is sensorimotor and relates to Piaget's sensorimotor stage itself when the infant develops understanding of the world by coordinating their sensory experiences with their physical actions. In adolescents who may be defensive or uncomfortable with the therapy process, art may be seen as a neutral mediating tool that can make the process feel less confrontational. It could be hypothesized that if a young person is more engaged in treatment the higher the likelihood that the intervention will be effective.

Utilizing art also offers alternate ways to express thoughts and emotions by offering visual and tactile outlets. Morris (2014) hypothesized that due to the role of imagery in maintaining anxiety disorders, utilizing art in CBT for anxiety disorders could be beneficial. Morris incorporated art into a brief cognitive behavioral art therapy (CBAT) model for panic disorder with agoraphobia and in a second case of treating generalized anxiety disorder. While this series only had two participants, the quantitative results and case

information suggest that art may be a viable addition to CBT, as measures of anxiety were significantly reduced in the treatment group.

Art is a bodily based activity that could serve as a significant window of expression when words fail (Hinz, 2006). Utilizing art can help children and adolescents who struggle with alexithymia, or an inability to express thoughts and emotion using words. Depending on the developmental level of the child, there may be difficulty verbalizing feelings due to lack of abstract thinking. Art can provide a language or a vehicle for expression when it is difficult to use verbal language to describe or identify feelings. The artwork created in session becomes something that represents the young person's thoughts/feelings that is visible and tangible, unlike emotion. The art can serve as a material that is able to be processed and reflected upon with the therapist in a therapeutic environment.

Influences from Psychoanalysis

D. W. Winnicott's (1896 to 1971) work highlights the importance of play and creativity, and the significant role that the therapist has in facilitating this in session. One of his early interventions, the "Squiggle Game," was described by Winnicott as a vehicle for enhancing communication between practitioners and children as young as seven years old. The game begins with the practitioner drawing an impulsive line or "squiggle". The child is asked to create a picture from this squiggle. Once the child's picture is completed, the roles are reversed and the child draws the squiggle and the practitioner creates a new picture from the squiggle. This simple activity of engaging the child in art encouraged interaction and the expression and sharing of emotions.

A transitional object is an object of comfort and connection originally used to describe the phenomenon of a child becoming attached to an inanimate object such as a blanket, cloth, or stuffed animal that served as a connection to a caregiver, most often a mother. This object creates a sense of psychological comfort for the child and assists in times of separation or transition. Winnicott proposed that the art created in art therapy could serve as a transitional object in that it can maintain a connection with the child and therapist both within and between the sessions (Waller, 2006). The proposed treatment interventions outlined in Chapter 5 will demonstrate a specific intervention that can be used for this purpose (Figure 11).

Interpersonal Neurobiology

The recent work of Thomas et al. (2017) developing a treatment for ARFID as outlined in Chapter 1 reflects the underpinnings of the etiology of ARFID. As this research continues to evolve, it is being hypothesized that the different presentations of ARFID are neurobiologically based and may be associated with difference in activation of the brain's appetite-regulating centers, oversensitivity in taste perception, and hyperactivation of the amygdala, anterior cingulate, and ventral prefrontal cortex – the part of the brain responsible for fight or flight response.

For the purpose of this dissertation, and as there is limited research on ARFID, a comparison is made by looking at literature that focuses on children and trauma. The comparison of ARFID and trauma can be made due to the similarities between anxiety felt in individuals with ARFID and how the brain responds to both anxiety and trauma. Van der Kolk (2003) states the "essence of psychological trauma is the loss of faith that there is order and continuity in life. Trauma occurs when one loses the sense of having a safe place without or outside oneself to deal with frightening emotions and experiences" (p.31).

There is literature that justifies the use of art with individuals who have experienced trauma. Children and adolescents with ARFID often have extreme fear reactions to food whether or not they have experienced an aversive or traumatic reaction to food such as choking. This can be viewed as a traumatic memory, or perceived trauma. Coleman and Macintosh (2015) suggest that the arts can be used as either an enhancement to evidence-based practices or as stand-alone interventions for traumatized children. For individuals who fall into the category of lack of interest in food, art may help with alexithymia and give a language when there is a lack of words to describe emotion. An example of this will be illustrated in Chapter 5.

Current Interventions in the Trauma Literature

Hass-Cohen, Findlay, Carr, and Vanderlan (2014) developed The Check protocol ("Check, Change What You Need To Change and/or Keep What You Want") which is an art therapy neurobiologically-based trauma protocol. This protocol is comprised of five art directives in the following sequence: 1. autobiographical trauma timeline, 2. trauma image drawing and narration, 3.image alteration, 4. self-strength image, and 5. optimistic future image. The authors provide a case example of how this intervention was used in practice with a traumatized patient.

In the first directive of this intervention, the patient is asked to draw an autobiographical timeline of their perceived traumatic event. The purpose of this stage is to allow the client to see her trauma as being part of the past and separate from the current state of being. In the second directive, the client is asked "if you were to paint or draw what happened or an aspect of it that you feel comfortable representing what would it look like?" This directive helps to create an image of the traumatic memories of the event. The third directive asks the client "if you could

change or keep one aspect of the drawing or painting, which aspect would you choose and what does it look like?" In this stage of the intervention, the client is allowed to cut out part of the image and/or paint over selected parts of the image. The client is encouraged to describe her altered artwork and note the differences between the two images. This is meant to help increase sense of control and emotional awareness as well as to decrease arousal. The final two directives of this intervention are designed to promote resiliency by asking the client to draw their strengths and to draw an image of what an optimistic future would look like. Throughout this intervention, the client is presented with different types of art supplies and media and allowed to bring to their own table their preferred choice of media allowing for a sense of control.

Although these interventions were designed to process a traumatic event, the intervention can be altered and/or modified to meet the needs of the ARFID population. An example of this will be outlined as a proposed intervention Chapter 5.

Art and the Treatment of Eating Disorders

Hinz (2006) states that art can be used in the treatment of eating disorders to explore the effects of the eating disorder, promote problem solving skills, assist in reclaiming emotions, address body image issues, and enhance self-acceptance. In recent literature, art is beginning to be used in conjunction with evidence-based practice with eating disorders. Given that adolescents with obsessive compulsive features tend to be less responsive to FBT for AN, Lock et al. (2018) examined the feasibility of combining FBT with either cognitive remediation therapy or art therapy for these individuals. The authors posit the link between obsessive compulsive features and inflexible perseverative and overly detailed cognitive processing style found in patients with both obsessive compulsive disorder and AN. According to Lock et al.,

(2018) "art therapy challenges rigid and perseverative thinking by focusing on creative and expressive processes while also encouraging integrative thinking aimed at seeing the big picture rather than rigidly focusing on just details to produce expressive artworks" (p. 63). This study opens up the possibility of further research and exploration on how evidence-based interventions with eating disorders may be enhanced by the arts.

There is a gap between what clinicians know and what they do, which at times is difficult to measure or explain when working in a field driven by evidence-based practice. The literature is lacking a clear rationale and evidence for the use of arts in social work practice. Huss and Sela-Amit (2018) addressed the usefulness of the arts in the field of social work practice and clarified the characteristic of arts that are relevant to social work theory and practice. Some would argue that art is unnecessary in practice, or that it is not feasible to include art in time limited practice with clients. The authors (2018) state "the arts can be understood as creating a phenomenological depiction of how the individual experiences the reality within which she or he lives" (p.1). The social work profession should move towards practice where arts are included to provide clients with language of self-expression.

In conclusion, the utilization of art in the therapeutic process may provide a uniquely beneficial intervention to assist children and adolescents in expressing emotion as well as to assist with healing. Expressive art therapy may fill the gaps for children where evidence-based interventions that are primarily verbal and cognitive-behavioral in nature are lacking in addressing the developmental needs of this population. Rubin (2016) explained, "A good art therapist strives to have both theory and technique 'in her bones' so that 'relating to a patient through art' can be truly spontaneous, flexible and artistic" (p.501). The following chapter

outlines proposed treatment interventions that blend evidence-based theory and technique with expressive arts.

CHAPTER 5: Proposed Treatment Interventions

Currently, a treatment manual does not exist for patients diagnosed with ARFID. The conceptual frameworks of FBT and cognitive behavioral theories are useful when applied to the treatment of eating disorders but the literature lacks specifics on how to incorporate these evidence-based treatment interventions to the ARFID population. The following proposed treatment/practice interventions are designed as cognitive-behavioral tools to assist clinicians in practice working with the child and adolescent population with ARFID across all mental health treatment settings such as outpatient, partial hospitalization, and inpatient hospitalization. These interventions will be applied to the case studies of Sophia, Lena, and Luke from earlier chapters.

Proposed Treatment in Phases

In order to develop appropriate interventions for ARFID, it is helpful to break treatment down into three specific phases. The first phase involves observation of the patient to gain a sense of the specific symptomatology and baseline eating patterns. During the second phase, interventions and exposures begin to occur. In the third phase of treatment, the goal is to continue to increase food acceptance across a variety of settings until the patient is able to independently complete more difficult foods. Specific cognitive behavioral interventions to address the variable ARFID presentations (fear of choking, texture issues, lack of appetite, etc.) accompanied by expressive therapy exercises can be outlined, along with a psychoeducation component for the family. The following outline is an example of how the three phases of treatment may appear:

- Phase one: Phase one begins with observation of the patient after the initial assessment.
  - The patient should have been evaluated by a medical provider to rule out medical complications prior to the start of any intervention.
  - The assessment should include a medical history including current height, weight, and BMI, as well as a growth history.
  - A thorough psychosocial assessment should be obtained to determine developmental level, cognitive functioning, any co-morbid diagnoses, family history, history of abuse, and motivation for change.
  - Measures that may be helpful to include in assessment:
    - Pica, ARFID, Rumination Disorder Inventory (PARDI) – A new semi-structured multi-informant interview that has recently been developed to diagnose ARFID across the lifespan (Bryant-Waugh et al., 2016). This measure has not yet been validated.
    - Nine Item Avoidant/Restrictive Food Intake Disorder Screen (NIAS) – A brief, reliable instrument to further investigate ARFID-related eating behaviors (Zickgraf & Ellis, 2018).
    - Children's Eating Attitudes Test (ChEAT) – A 26 item self-report questionnaire that measures eating attitudes and behaviors typically associated with AN and BN. This measure can be used to rule out the possibility of AN.
    - The Screen for Child Anxiety Related Disorders (SCARED) – A 41-item self-report inventory to assess anxiety (Birmaher, 1999).

The goal of phase one is to obtain baseline information regarding amount and variety of food that the patient currently accepts. This phase involves presentation of foods and noting response. It is important to observe behavioral response as well as to identify specific cognitions impacting feelings and behaviors. During this phase, the parent and/or clinician oversee presenting the food choices. It is critical to consider developmental issues at this stage.

- Phase two: This stage of the intervention is where the utilization of ERP is indicated. This involves in vivo exposures to feared foods with increasing difficulty, and elimination of maladaptive coping mechanisms currently being used by patient, e.g. refusal of food, excessive chewing, and/or spitting or holding of food in the mouth for extended periods of time prior to swallowing. The examples of how to help patients reframe cognitive distortions using a variety of CBT strategies accompanied by an expressive art therapy component are outlined. These strategies can include visualization, relaxation, and identification and reframing of negative thoughts.
- Phase three: Phase three continues to add new foods, increasing the amount and variety. The goals of phase three are to replicate behaviors demonstrated in session and at home in various other settings (school, restaurants, friends' houses, etc.) as well as for the patient to be able to independently use coping strategies learned in therapy.

Sample of Proposed Phases of Treatment Applied to the Case Study of Sophia:

A sample of how treatment might work with a child with ARFID will be outlined and applied to the composite case of Sophia from Chapter 3. Sophia is an 11-year-old girl who developed an intense fear of choking after learning in school about how to respond to choking emergencies including administering the Heimlich maneuver. Sophia became anxious that she or others might choke and began limiting her food intake to soft foods. As her anxiety increased, her food intake became increasingly limited, and she began to have a fear of swallowing her own saliva. Using the case of Sophia, an example of the three phases of treatment is outlined which includes specific proposed interventions that incorporate aspects of CBT, ERP, and family involvement along with expressive arts.

Phase one: Phase one begins with observation of the patient after the initial assessment. Sophia was already evaluated by a medical provider and medical etiologies had been ruled out. An assessment takes place that includes a medical history (current height, weight, and BMI, as well as growth history). A thorough psychosocial assessment is obtained to determine Sophia's developmental level, cognitive functioning, family history, history of abuse, co-morbid diagnoses, and motivation for change. The following measures could be administered: PARDI – NIAS, ChEAT, and the SCARED –to obtain data about Sophia's feelings about food and anxiety level. After completing the initial assessment, Sophia is presented with different foods in session and response was noted.

Parent psychoeducation about ARFID as an eating disorder is very important. Anecdotally, families are often surprised that their child is diagnosed with an "eating disorder" as they have no fear of gaining weight, and information about the ARFID diagnosis can be extremely helpful. Frequently parents of children and adolescents with ARFID struggle to

understand why their child is having difficulty and require psychoeducation on how anxiety can manifest itself in the context of this diagnosis. Sophia's parents had difficulty understanding why Sophia was fearful of choking when she had never choked. A specific example of a psychoeducational exercise for a parent to illustrate how a child who has a fear of choking may feel is to present the parent with the following prompt – "*Swallow as fast as you can 20 times*". Most likely the parent will attempt to swallow several times and quickly realize that they begin to have trouble swallowing after a few attempts. This simulates the physical response that a child who has anxiety about swallowing may experience by creating the physical sensation of difficulty swallowing. This exercise also points out how the mind can become focused on a physical sensation and how difficult it can be to distract or shift thought process.

Proposed intervention for use in phase one: In this first phase, Sophia is assisted in creating a food hierarchy of easy to difficult foods. Sophia is given a list of foods and asked to use a highlighter to indicate easy, medium, and difficult foods in different colors thereby creating a food hierarchy. Some examples of Sophia's foods include:

- *Easy foods* = plain yogurt, pudding, smoothies, applesauce
- *Medium foods* = apples, bananas, Oreos, chocolate bars
- *Difficult foods* = chicken, pizza, sandwiches

Sophia is asked to draw foods on a self-created hierarchy. She chooses to create her hierarchy by drawing a picture of a ladder and including pictures of foods getting more difficult as they go up the ladder. During this initial assessment, Sophia has a difficult time verbalizing her fear of choking. She often uses the words, "I can't swallow", but is unable to verbalize fearing that she will choke, not be able to breathe, and die. Sophia is asked to create drawings/paintings related to her fear of choking to assist with verbalization of feelings. Prompt:

"Draw a picture of how you feel when I ask you to take a bite of this food". Sophia draws a picture of herself eating and draws black scribble all around her throat. She draws several people around her, some of whom are crying, and an ambulance can be seen in the background. After creating the drawing, Sophia is able to talk about her fear in more detail and is able to communicate images that she has "in her brain" that are similar to the video she was shown at school about choking.

Figure 6: Fear of choking.

Phase two: In this phase, positive reinforcements are used for bites taken, starting with easy foods and moving on to more difficult foods. Sophia is able to achieve rewards (movie night,

stay up late, new item from craft store, etc.) after she is able to move a certain number of foods up her hierarchy ladder. In this phase, Sophia is no longer able to spit out saliva or food. She learns the CBT skills of identifying negative thought patterns and reframing them into positive thoughts. Sophia creates pictures of these positive thoughts which provides a visual image in her mind of how to reframe negative thoughts thereby reinforcing the CBT concept. Sophia works on relaxation techniques, including breathing exercises and guided imagery. Parents participate in sessions and receive psychoeducation on CBT and behavioral contingencies.

Illustration of Proposed Intervention for Phase Two – Throat Tube for Fear of Choking:

Sophia will create a "tube" of similar size to a child's throat out of art material to produce a visual of food going through a large space (See Figure 7). This intervention decreases fear and provides an interoceptive exposure to the fear of choking. In session, the clinician is able to work with Sophia to create a decorated pretend throat or "throat tube". This is achieved by taking a piece of paper and rolling it into the shape of a tube, slightly smaller than a cardboard toilet paper roll. A toilet paper or paper towel roll can also be used for this intervention. Sophia is able to use whatever art supplies she prefers to decorate her tube and create her own design. Sophia chooses her throat tube to be her favorite colors, pink and purple, and decorates it with glitter and gems.

As Sophia is creating her throat tube, psychoeducation is provided about choking hazards and babies. Therapist prompt:

> "*Because babies and small children often put things in their mouth, they are at higher risk for choking. Doctors often use an empty toilet paper or paper towel tube as a*

"choking hazard" guide when explaining to parents of small children what they should keep away from them for safety. Any toy or object that is small enough to fit through an empty toilet paper or paper towel tube can fit down your throat and should not be given to babies. This means that if it fits down the tube, it can fit down your throat".

Figure 7: Example of 'throat tube' for fear of choking

Secondly, education on the elasticity and function of the esophagus is provided and allows Sophia to have a visual of what swallowing looks like. It is also helpful to educate Sophia and her family on the anatomy of the throat by showing them an image of the esophagus such as the one below (see figure 8):

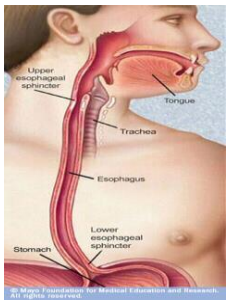

Figure 8: Education on anatomy of esophagus for fear of choking

It can also be helpful to show a video of what a normal swallowing study looks like to demonstrate the elasticity of the throat. This publicly-accessible video creates a visual of what the throat looks like as it expands when food is swallowed: https://www.youtube.com/watch?v=QvNA53Ky2qQ (NorthernSpeech, 2016).

To take this interoceptive intervention a step further, Sophia is instructed to drop bites of food (starting with crumbs and moving to larger pieces of food) down the throat tube and watch the food go through. This provides a visual of safety as the food successfully goes down the "throat". The tube can be used in conjunction with in vivo exposures by having Sophia keep the "throat" next to her as a visual reminder that the food will be able to go down her own throat. It may also be helpful for Sophia to take this tool home to practice outside of session. Keeping the throat tube in close proximity while attempting exposures creates an image that reminds Sophia that even though she feels as though she may choke, the food can actually fit down her throat.

Phase three: Outpatient therapy should continue as Sophia proceeds to master exposures across settings such as at school, her friend's homes and restaurants. Exposures continue to take place in the treatment setting, and parents work with Sophia on exposures in the home setting, gradually increasing amount and variety expected. They continue to use behavioral contingencies and positive reinforcement when Sophia is able to master a new food. Sophia is asked to complete art-themed homework of completed foods and feelings identification. As

anxiety decreases, and Sophia is able to meet her goals consistently, therapy visits begin to become less frequent. Discharge from outpatient therapy takes place when goals have been met.

Proposed Interventions for Different ARFID Presentations

There are several other presentations of ARFID that are clinically different and distinct from that of Sophia. The following sections provide examples of specific interventions that could be applied to additional ARFID presentations using the cases of Luke and Lena discussed in previous chapters.

Materials Needed for Proposed Interventions

Materials needed for interventions used in expressive therapy can include, but are not limited to, the following: pencils, colored pencils, crayons, chalk pastels, oil pastels, watercolor markers, sharpies, gel pens, acrylic paint, watercolor paint, glue, scotch tape, washi tape, glitter, magazines, old books, stamps, ink pads, newspaper, watercolor paper, construction paper, patterned scrapbooking paper, clay, model magic, beads, feathers, or any other supplies that can be used to create art. Having a variety of supplies allows the patient to have control over what types of mediums they choose to work with.

Proposed Intervention:

Creatively Managing Food Exposures

The following intervention can be applied to phase two of Lena's treatment. Lena has been struggling with picky eating since an early age. Around the age of five, Lena became increasingly picky and began to avoid meats and vegetables. Her selections of foods continued

to narrow until she was only eating a small number of foods and she had fallen off her growth curve.

Lena creates a food hierarchy chart similar to Figure 2 described by Thomas et al. (2017) (see Chapter 1). Lena appears more comfortable when utilizing art in session, so art is integrated when tracking her food exposures. Lena is able to design a hierarchy using art supplies to create a 3 column outline of "okay foods", "maybe foods", and "not yet foods". Lena was able to categorize the foods that she is able to do easily as the "okay foods", the foods that she is working on doing as the "maybe foods", and the foods that she will soon be doing as an exposure as the "not yet foods". Lena creates drawings of these foods on colorful Post-it notes and washi tape so that they are able to be moved from column to column. For example, as Lena is working on cherry tomatoes as an exposure, they initially are in the "not yet" column as this is a very difficult food for her to attempt. As she begins to attempt the food, she is able to move the cherry tomatoes to the "maybe foods" column until eventually, after repeated exposures, the cherry tomatoes make it to the "okay foods" column. Allowing Lena to have some control over how her exposures are represented, along with the freedom of creative expression, engages her in the process of ERP outside of the therapy setting. She is eager to complete exposures so that she can work on moving items across her chart creatively. Having the visual of watching her "not yet" foods move to the "okay foods", as well as bringing the chart to session each week, is motivating and reinforcing for Lena

Proposed Intervention:

Entering a Child's World to Make CBT Concepts More Relatable

The following intervention can be applied to phase two of Luke's treatment. Luke presents with ARFID, exemplified by disinterest in food, low weight, and failure to make gains in growth and development. The following illustration of Luke is an example of using a child's preferred interest and incorporating that interest into the therapeutic process and applying expressive arts.

Luke is an avid fan of playing video games. In one particular game, there is a character who is very difficult to defeat named the Juggernaut. Luke reports that he often thinks about his negative thoughts as the Juggernaut but only in his brain. Merriam-Webster (2017) defines a juggernaut as "a massive inexorable force, campaign, movement, or object that crushes whatever is in its path". Luke resonated with using this term to describe the powerful feelings and behaviors he experiences and the difficulty he had encountered trying to overcome these thoughts. Using Luke's own words helps to make the concept of anxiety more relatable and easy to identify. To take this a step further, creating a visual picture of what the Juggernaut looks like in Luke's mind also creates a tangible image to utilize when working through therapy concepts and skills. Creating the Juggernaut gives Luke a language and a descriptor for his feelings. This image functions as a persona of sorts for the anxiety driving his symptoms of ARFID, in a language that is comfortable for him.

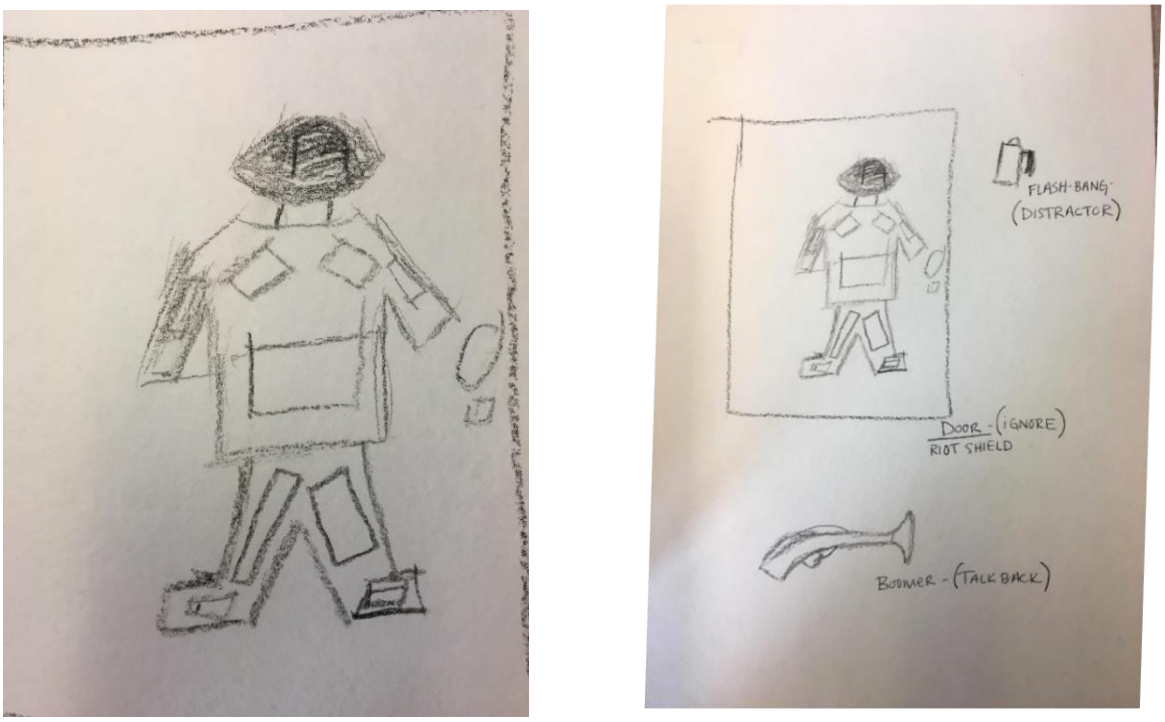

Figure 9: Picture to represent how patient visualizes his anxiety as the Juggernaut and how he envisions cognitive behavior skills to use to defeat the anxiety

In this image, Luke draws his version of the Juggernaut which he describes as a "large, scary guy covered in a lot of armor". When asked, "What does the Juggernaut say?" Luke responds, "He tells me that I am full, that my belly hurts, that I can't eat any more, that I am not hungry". When prompted, Luke is able to draw a picture of the Juggernaut. Drawing this picture creates a visual image that Luke is able to use in his mind when fighting the negative thoughts. This concept also allows the introduction of CBT strategies in a language that Luke is comfortable with. Calling the CBT strategies "weapons" to fight the thoughts makes them fun and easier to apply to his situation. The goal in therapy is to have at least three "weapons" to fight the Juggernaut so that when he strikes, Luke is armed and ready to fight back. If the first weapon is not effective, he moves to the next weapon to use in his attack against the Juggernaut.

Luke responds well to thinking about therapeutic concepts as "weapons". He was engaged in the process and eager to work and develop these images. He is able to come up with the following weapons:

- WEAPON #1: Talking back to negative thoughts with the "Boomer";

  CBT Skill = reframing cognitive distortions

- WEAPON #2: "Flashbang"; CBT Skill = Using a distractor
- WEAPON #3 "Shut the door and ignore"; CBT Skill = Negative thought stopping

The following table outlines the CBT skills and how they were identified in Luke's own language:

Therapeutic Skill/ "Weapon"	Client's Created image and description	Proposed use of CBT skill
Reframing Cognitive Distortions	"Boomer"- a weapon that fights the Juggernaut with words. Luke describes this weapon as looking like the fart gun used in the Minions movie.	Juggernaut: "you are not hungry" Luke: "yes I am" Juggernaut: "your belly hurts" Luke: "my belly is fine, I am just starting to feel full, I will be ok"
Using a Distractor	"Flashbang" - a bomb-like weapon that gives off a large flash of light that you can throw to startle and distract your enemy.	Luke was able to identify distractors to distract him from the voice of the Juggernaut- watching funny videos, playing with his dog, playing a card game with mom, building something with Legos, and drawing.

Negative Thought stopping	"Shut the door and ignore". Luke drew what he described as a riot shield, a strong metal door he could slam on the Juggernaut.	Luke was able to identify with the concept of thought stopping by visualizing slamming a door on the Juggernaut when his anxious thoughts began to arise.

Table 6: Example of using child's own images to make CBT concepts more relatable

In subsequent therapy sessions, Luke creates images of battle where he uses his weapons to defeat the Juggernaut. This appears to decrease anxiety around CBT concepts and helps Luke to remember and implement the skills outside of sessions.

Proposed Intervention:

Adapting the Check Protocol for ARFID

This intervention proposes how to adapt The Check Protocol "Check, Change What You Need To Change and/or Keep What You Want" as outlined in Chapter 4 for Sophia. The Check protocol is an art therapy neurobiologically-based trauma protocol developed by Hass-Cohen et al. (2014). For this intervention, the patient is presented with different types of art supplies and allowed to bring their preferred choice of supplies to the table allowing for a sense of control.

First directive of the intervention: Ask the patient to write out or draw an autobiographical timeline of their perceived traumatic event. This could be applied to the anxiety and fear that Sophia presented with regarding her fear of choking. The purpose of creating this timeline is to allow Sophia to see the fear of choking as a separate part of her current state of being. For Sophia, this timeline could look like not having fear of choking, watching the video at school, and then developing a fear of choking.

Second directive of the intervention: The patient is then asked, "If you were to paint or draw what happened or an aspect of it that you feel comfortable representing what would it look

like?" This directive helps to create an image of the traumatic memories of the event. Although Sophia never actually had a choking incident, she experiences traumatic images in her mind of herself choking with others panicking around her. Figure 6 is an example of what Sophia might draw when given this directive.

Third directive of the intervention: Ask the patient "If you could change or keep one aspect of the drawing or painting, which aspect would you choose and what does it look like?" In this stage of the intervention, the client is allowed to cut out part of the image and/or paint over selected parts of the image. For Sophia, this might look like drawing herself without the tears and black scribble around her throat indicating that she is choking. She may turn the panicked faces of others into happy faces or she may remove the ambulance in the background. Sophia would then be encouraged to describe her altered artwork and note the differences between the two images. This step of the intervention is meant to help increase sense of control and emotional awareness as well as to decrease arousal.

Final directives of the intervention: Ask the patient to "Draw your strengths and draw an image of what an optimistic future would look like". These final directives of the intervention are designed to promote resiliency, creating a positive image. For Sophia, this may be a picture of her playing soccer with her teammates while her family is cheering her on.

<u>Proposed Intervention:</u>

<u>Alexithymia – Using Art to Create a Voice for Feelings</u>

Anecdotally, many patients with ARFID have difficulty using words to describe what is causing the difficulty that they are having with eating. This is commonly seen in the sub-group of children who have a lack of interest in eating food or loss of appetite. Often times it can be

difficult to explain the anxiety related to new foods especially when the anxiety is not about taste or texture. The following exercise can be especially helpful for children and adolescents who have trouble putting to words how they are feeling about eating or identifying specific thoughts they have about food.

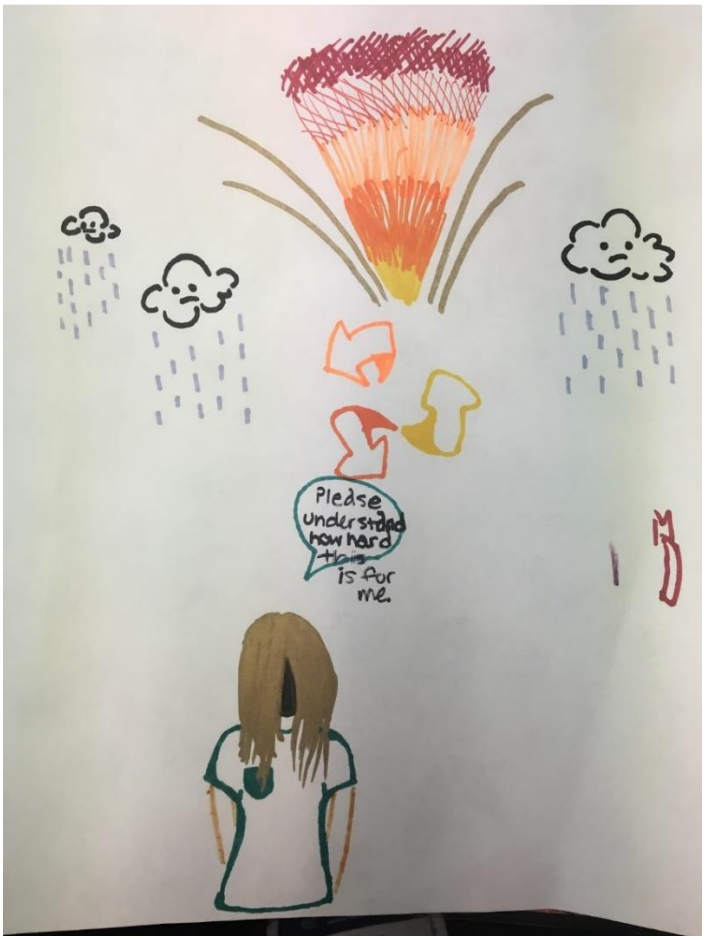

Figure 10: Lena's drawing of how she was feeling about ongoing exposures

Lena struggles to verbalize emotions related to her anxiety. In therapy it is very difficult to break down thought processes in order to work through CBT concepts. Conversations, worksheets, and attempts to process always led to Lena stating, "I don't know, I just don't want to eat!" and "I don't know why it's hard for me". At Lena's particular stage of development, her

thought process is more concrete and she struggles with verbal language therefore making it difficult to identify and process emotion. Lena is asked to create a picture to describe how she is feeling about the exposures she is being asked to complete. Lena's art provides tangible evidence of concepts to discuss in therapy improving her ability to participate in CBT.

Proposed Intervention:

"Altered book" Art Journal

Creating an "altered book" or an art journal is a unique way to engage children and adolescents in the therapeutic process. For this intervention, the patient is assisted in turning an old hardback book/novel into an art journal. The patient has free reign over their altered book to paint, draw, and collage on the pages. This intervention can be completely child-driven, but at times it can also be helpful to provide a prompt or theme, and then allow the patient to create something. This intervention can also serve as a coping outlet to use outside of session. Patients can be instructed to create pages in their altered book during times between sessions and bring the altered book into the therapy session for processing.

In the following example, Lena is given the prompt "create a page to express how you feel about your goals". She uses mod podge and layered tissue paper to create a background and cut words and sayings out of a magazine. The patient chooses "hurt and hope" and "if I am a leader, then I'm the leader of the weirdos". This altered book page leads to significant processing and discussion in therapy regarding her identity, struggle with social issues that are related to her difficulty with eating, and other social issues. Prior to the creation of this page, Lena is unable to verbalize these feelings using words.

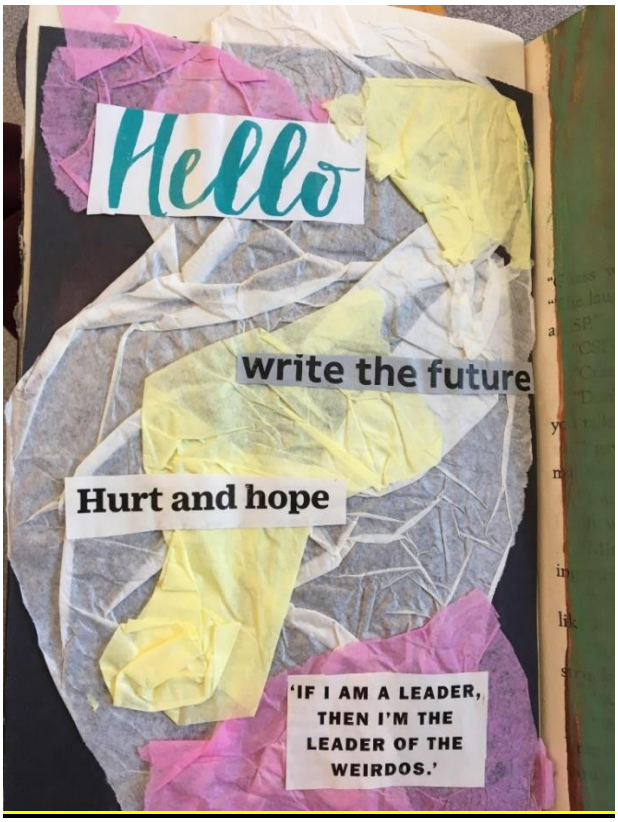

Figure 11: Altered book page, prompt: "Create a page to express how you feel about your current goals".

Inclusion of Family in Expressive Interventions

As with any treatment involving children and adolescents, the inclusion of the family is extremely important. The literature supports family involvement in the treatment of eating disorders (Eisler, 2005; Lock& Le Grange, 2013). The treatment interventions outlined in Chapter 5 can also be helpful when family is included. For example, in the intervention "Entering a child's world to make CBT concepts more relatable," Luke created the concept of the Juggernaut and his weapons to defeat the eating disorder thought process. It appears very helpful to share the language and images with the family so that they can continue to utilize these concepts at home. For instance, if Luke was struggling with a meal his parents could remind him that he needs to think of the weapons he uses to defeat the Juggernaut. This creates a child-friendly language that allows parents to support their children while encouraging the utilization

of coping mechanisms learned in therapy. Other examples of family involvement and inclusion would be the psychoeducational component of the intervention, as well as managing exposures outside of the sessions.

In conclusion, as specialized interventions emerge for children and adolescents with ARFID, the inclusion of expressive therapy techniques may be beneficial. The examples of proposed interventions discussed in this chapter provide specific ways to utilize expressive therapy techniques in conjunction with cognitive behavioral interventions. Expressive arts can be included in interventions for several different presentations of ARFID as illustrated with the case studies of Luke, Lena, and Sophia. These interventions may assist in meeting the developmental needs of children and adolescents, therefore making them more engaging and possibly more effective for this population.

CHAPTER 6: DISCUSSION

The examples of proposed interventions outlined in this dissertation provide specific ways to apply expressive therapy techniques to evidence-based cognitive behavioral interventions for the treatment of ARFID. These interventions may assist in meeting the developmental needs of children and adolescents presenting for treatment, and may be adapted to the specific needs of the patient. Including expressive arts into treatment may and provide a more developmentally-appropriate language for therapy.

Limitations

One limitation of this proposed treatment model is that there are children who may not benefit from art-based interventions. A child with a co-morbid diagnosis or personality trait may find distress in art based interventions. For instance, if a child is perfectionistic, she may have difficulty getting her picture "just right" which may cause frustration and increased anxiety. Another child may be very particular about getting art supplies like paint or glue on hands or clothes and may be hesitant about using certain art supplies for fear of getting dirty or messy. It is important to allow the child or adolescent to have control over which supplies they would like to use. Other limitations to consider would be time to complete art-based interventions in an allotted time slot and having funds available to purchase art supplies. Additionally, therapists may not have interest in or training in expressive therapies, and therefore may not want to incorporate these techniques into practice.

Areas for Further Research

Further research is needed on how the utilization of expressive therapies can enhance current evidence-based practice for the treatment of eating disorders. As specific treatments for ARFID are beginning to emerge, the argument can be made for the consideration of inclusion of the expressive arts in treatment interventions. Areas for future research could include a qualitative study on how children, adolescents, and their families perceive the use of expressive therapy and the benefits they feel they have gained in treatment where expressive therapy was incorporated into other evidence-based intervention.

As part of this process, a sample intervention would be developed and distributed to a core group of eating disorder experts selected to review it and provide feedback. These experts would consist of professionals who specialize in the treatment of eating disorders across disciplines, and who have experience treating individuals diagnosed with ARFID. This group could include adolescent medicine doctors, registered dietitians, licensed psychotherapists (PhD and LCSW), as well as bachelors' level psychiatric assistants. This group of professionals would be asked their opinions via written survey on the intervention in terms of format and ease of use as well as applicability to clinical practice. Their feedback would be used to make changes and modifications to these interventions.

Another possible use for the proposed interventions is examining how they could be adapted for use in the treatment of children and adolescents with AN. Lock et al. (2018) recently proposed that the inclusion of art therapy could be feasible in individuals who have more rigid thought processes and obsessive compulsive features. There is opportunity for further exploration and testing of specific art-based cognitive interventions in the treatment of all

diagnostic categories of eating disorders that present in the child and adolescent population, where a developmental perspective is important.

In conclusion, children and adolescents with ARFID have unique developmental needs that should be considered when designing treatment interventions. Expressive art therapy can be used as an appropriate adjunct to the evidence-based practice of CBT and FBT. Utilizing expressive art therapy in the treatment of ARFID may assist in verbalization of feelings and management of difficult emotions, and possibly increase motivation and engagement in the therapeutic process.

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