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The multidisciplinary treatment of eating disorders focused clinical multidisciplinary independent study project (FCM-ISP)

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The Multidisciplinary Treatment of Eating Disorders
Focused Clinical Multidisciplinary Independent Study Project (FCM-ISP)

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INTRODUCTION

Eating disorders are a diverse group of psychiatric diseases affecting millions of youth in the United States. Because these disorders can often be chronic illnesses with significant physical, psychological, and social consequences, early intervention is critical for a good prognosis. This requires skilled primary care physicians to recognize signs of eating disorders and refer patients to the appropriate level of care. The purpose of this project was to gain clinical exposure to eating disorders and their treatment to become a better-informed future general pediatrician who can identify and initiate management of these disorders.

In order to accomplish this goal, I spent a total of two months observing eating disorder treatment in a variety of inpatient and outpatient settings. Specifically, I spent four weeks at the Rady Children's Hospital Medical-Behavioral Unit, spread over different months to see different cohorts of inpatients. I also spent one week observing the UCSD Eating Disorder Intensive Family Treatment program for young adults, one week with the UCSD pediatric partial hospitalization program (PHP), one week with the UCSD adolescent PHP, and two days with the UCSD binge eating PHP. Lastly, I spent one day touring the Center for Discovery residential program in La Jolla. During this time, I was able to appreciate the contributions of the many different disciplines that work together in the treatment of eating disorders and gain a deeper understanding of these disorders and their management. The following paper is a summary of the knowledge I gained in addition to my personal experiences and reflections.

DEFINING THE DISORDERS

The DSM-V recognizes many distinct types of eating disorders, but this paper will focus specifically on: anorexia nervosa (AN), bulimia nervosa (BN), avoidant/restrictive food intake disorder (ARFID), and binge-eating disorder (BED).¹ Each of these disorders will be described below, accompanied by an anecdote of a particular patient I met with that diagnosis.

Anorexia nervosa (AN)

The diagnostic criteria for AN include restriction of energy intake, fear of gaining weight or being fat (or failure to recognize the severity of one's weight loss), and disturbed perception of body image.¹ AN may be classified as restrictive or binge/purge subtype based on the eating disorder behaviors that the patient engages in. AN was the most common diagnosis I encountered in each level of care. I observed a broad range of severity and stage of recovery. However, the patient that was most memorable to me was VT, a young adult woman who had been battling AN for more than half her life. Her most recent relapse occurred while she had been studying abroad and resulted in acute decompensation and hospitalization in a foreign country. She was admitted to Rady as soon as she returned to the United States. I met her on my first day of observation and her appearance was shocking to me - she was taller than I am but was just over half her ideal body weight. She had significant muscle wasting and was unable to climb stairs for

that reason. I learned about many medical complications and physical exam findings of malnutrition by reading through her chart. Notably, because she had been in and out of treatment for so long, she had developed insight into her eating disorder thoughts but continued to act on them. She expressed how conflicted she felt at any given time regarding recovery and how frustrated she was that she couldn't make simple choices regarding food without calculating the calories in her head. All the while, this relapse had jeopardized her chances at returning to college and caused significant conflict with her parents. Through getting to know more about her and the other patients that were hospitalized at the time, I was able to appreciate how deadly eating disorders can be and what serious physical, emotional, and psychosocial consequences they can have, not only for patients but also for families.

Bulimia nervosa (BN)

BN is characterized by recurrent binge eating as well as compensatory behaviors to avoid weight gain, including self-induced vomiting, laxative abuse, restricting, or excess exercise. To meet diagnostic criteria, the behaviors must occur at least once a week for three months, and cannot only occur in the context of AN.¹ During the young adult intensive family treatment week, I met a patient with BN, AM, who personified the ego-dystonic experience of the disease. She expressed that her behaviors ran contrary to what she felt like she really wanted, but was frustrated with her perceived lack of control. She wanted to understand the neurobiological basis of her behavior better and asked questions about it. When she learned that fMRI studies of bulimic patients show reward centers in the brain that do not shut off despite satiety, she felt this physiologic description really resonated with her own experiences.

Avoidant/restrictive food intake disorder (ARFID)

ARFID is characterized by a failure to take in sufficient nutrition in such a way that disturbs weight gain, leads to nutritional deficiency (or dependence on nutritional supplements), or impairs psychosocial functioning. This disturbance is not explained by body image issues, an underlying medical problem, or lack of available food.¹ Often, the issue is related to specific fears or aversions to foods. This was a more common diagnosis in the UCSD pediatric PHP. Some patients were simply described as picky eaters who progressively restricted the foods that they were willing to eat until they were unable to meet their nutritional needs. Other patients had specific fears of choking or vomiting. One patient in particular, FS, was 7 years old and had consistently refused to eat due to a fear of vomiting following an episode of viral gastroenteritis. However, because of her age and inability to articulate her thoughts or fears, an extensive organic workup was done and eventually a G-tube was placed. When it became obvious that her inability to take in oral feeding was psychological in nature, her parents worked with an outpatient therapist in New York but were unable to overcome the issue without more structure and support, and were eventually referred to UCSD partial hospitalization program.

Binge eating disorder (BED)

BED involves recurrent episodes of binge eating, which is defined as eating a quantity of food that is larger than most people would eat in similar circumstances, accompanied by a sense of lack of control. To meet criteria for BED, binge eating occurs at least once

a week for at least three months with marked distress but without the compensatory behaviors seen in BN.¹ In my short experience at the binge eating program, I met a patient, PW, who was in his 40s and had struggled with obesity for a significant part of his life. Although he was normal weight at the time I met him, he was concerned about his relapsing binge eating behavior and wanted to address it in intensive outpatient treatment. As I sat with him during a meeting with the dietitian, I realized that I had my own misconceptions about binge eating being limited to sweets or “junk food.” However, he shared his distress surrounding a very large portion of cottage cheese that he had over the weekend. He described that he was used to using food as a coping mechanism and, in the midst of emotional distress, did not realize how much he had eaten until he had finished a large container. It was an eye opening experience to see how eating disorders span such a broad range of pathology, especially after spending nearly two months with patients who mostly had restrictive eating disorders.

EATING DISORDERS AND GENDER

Eating disorders most commonly affect adolescent females, with an estimated 0.5% of all adolescent females in the United States meeting criteria for AN and 1-2% meeting criteria for BN. However, males account for 5-10% of all eating disorder patients.² In my observations, at least 10% of the eating disorder patients in the MBU at a given time were male. This was also consistent in the adolescent and PHP and IOP programs. In the pediatric PHP, however, about 50% of patients were male, which may be explained by the fact that there is less female predominance in both ARFID patients and in younger patients with AN.² Although it is true that patients with eating disorders are predominantly female, there is a growing number of male and transgender patients identified with eating disorders who carry their own specific challenges in terms of diagnosis and management.

The male AN patients that I saw on the inpatient side tended to present with more serious complications, particularly profound bradycardia. EK was an 18 year old male who presented with several months of GI discomfort after an acute weight loss. He admitted that he had initially tried to lose weight intentionally because he “thought it would look better,” but then experienced gastrointestinal complications of his weight loss that made it more difficult to eat and caused further weight loss. He received an extensive organic workup and saw GI specialists for months before anyone recognized the possibility of an eating disorder, despite a family history of AN in two first-degree relatives. His heart rate would go down to the 30’s overnight initially and took three weeks of nutrition and steady weight gain before consistently staying above 50. It is possible that he would not have required such a long hospitalization if the eating disorder had been identified earlier, but unfortunately, they are less likely to be suspected in males by community physicians.

I also observed a significant correlation between eating disorders and transgender identity, particularly AN. In my two months of observation, I encountered multiple transgender patients, particularly female-to-male, who viewed weight loss and amenorrhea posi-

tively from a gender dysphoria standpoint. This can be a particularly challenging issue for treatment, given the expectation that adequate weight restoration will be accompanied by resumption of menses which will be incredibly distressing. One transgender inpatient in particular repeatedly endorsed suicidal ideation, which is unfortunately consistent with the fact that both eating disorders and transgender identity are so strongly associated with suicidality.

MEDICAL COMPLICATIONS AND MORTALITY

Eating disorders can have numerous physical consequences that may be attributable to weight loss in general or to specific eating disorder behaviors.

Complications of malnutrition

Malnutrition has many medical consequences that range in severity. As a general rule, the degree of weight change (i.e. the amount of weight that is lost and how quickly it is lost) is a more important predictor of medical complications than absolute weight at presentation. For this reason, it is possible for a patient to present with complications of malnutrition despite having a normal or high BMI, if they have had significant weight loss. Malnutrition affects every body system and the most common complications are summarized below.

- **Cardiac:** Cardiac death is the number one cause of death among eating disorder patients. The most common presentation of malnutrition affecting the heart is bradycardia. This is a common reason for hospital admission, requiring overnight telemetry and close monitoring. Of note, many patients with eating disorders may be athletes and their bradycardia is often misattributed to athletic heart syndrome. In athletes, sinus bradycardia is explained by thicker heart muscle pumping more efficiently and delivering a larger stroke volume with each beat, so that cardiac output can be maintained with a lower heart rate. However, in eating disorder patients, bradycardia occurs due to compensatory decreases in metabolic rate as the body tries to conserve energy. Stroke volume is also lower due to cardiac muscle wasting and reduction in ventricular mass and wall thickness; together with bradycardia, the result is a reduced cardiac output, poor perfusion, and changes in orthostatic heart rate and blood pressure. Loss of cardiac muscle may also result in conduction abnormalities found on EKG. Pericardial effusion can also be seen on echocardiogram, although these are generally asymptomatic and resolve with weight restoration.^{2,3}
- **Gastrointestinal:** Eating disorders can have an especially complicated effect on the gastrointestinal system due to confused hunger cues. Most commonly, patients experience overall gut slowing resulting in delayed gastric emptying and constipation. This can be worsened by the abuse of laxatives. In the inpatient setting, patients are frequently started on stool softeners in order to help with constipation while avoiding stimulant laxative dependence. The liver may also be impacted by malnutrition, as excess stress on the liver to perpetually break down and circulate stored nutrients results in hepatocyte damage and transaminitis.²
- **Endocrine:** Malnutrition leads to many different endocrine abnormalities, including hypercortisolism, sick euthyroid syndrome, and hypogonadotropic hypogonadism. In younger children, prior to or during puberty, malnutrition-associated hypogonadism

may result in pubertal arrest and suppression of the pubertal growth spurt. This may present as growth delay or delayed menarche in girls. In females that have started menstruating, malnutrition often leads to secondary amenorrhea, which may even precede significant weight loss. Low sex steroid levels and low weight result in decreased bone density and may result in bone fractures.^{2,3}

- Hematologic: Low weight is associated with hypoplastic bone marrow and cytopenias. Notably, however, it does not appear that leukopenia associated with low weight translates to more infections;³ however, it may contribute to poor wound healing.
- Dermatologic: Patients may develop lanugo and acrocyanosis due to poor temperature regulation and poor peripheral circulation. Pressure sores may also develop over bony prominences because there is little fat on the body to pad the skin.²
- Neurologic: Extreme malnutrition can lead to impaired cognition and significant emotional lability. Patients often report difficulty recalling memories from the time that they were at their lowest weight. On brain imaging, patients with anorexia are frequently found to have cerebral atrophy resembling the brain of a person with Alzheimer's disease.^{2,3}
- Psychiatric: Although eating disorders do often co-occur with other primary psychiatric conditions, patients often have depression and anxiety as a result of malnutrition. Suicide is the second most common cause of death in eating disorders, but suicidality and other psychiatric symptoms may resolve with nutritional rehabilitation alone.²

Complications of eating disorder behaviors

Specific eating disorder behaviors are associated with physical consequences even in the absence of clinically significant malnutrition. Repeated vomiting over time can damage the teeth, oral mucosa, and esophagus. Esophageal complications range from GERD to life-threatening esophageal rupture. Long term abuse of laxatives can result in chronic constipation or toxic megacolon. Vomiting or diuretic/laxative abuse can all lead to dehydration and hypokalemia, which may in turn lead to cardiac arrhythmia or arrest. Water loading can cause hyponatremia, which may result in significant neurological complications or death.⁴

Mortality in eating disorders

AN has a significant mortality rate, reported to be about 5.9% in adults and adolescents, which are most often from cardiac complications or suicide.⁵ Eating disorders have the highest mortality rate of any psychiatric illness.

REFEEDING AND NUTRITIONAL REHABILITATION

Weight restoration is the first priority in the treatment of eating disorders because the psychological basis of eating disorders often cannot be effectively addressed while cognition is negatively impacted by malnutrition. Furthermore, malnutrition in and of itself seems to perpetuate eating disorder psychopathology and behaviors, so there may be some improvement in eating disorder thoughts from weight restoration alone. However, weight restoration involves several important considerations from both a medical and behavioral standpoint.

Refeeding syndrome

Weight restoration in a malnourished patient requires careful monitoring for refeeding syndrome, the potentially fatal complication of reintroducing nutrition to a patient who had previously been eating very little. Refeeding syndrome is marked by hypophosphatemia and other electrolyte abnormalities, vitamin deficiencies, and volume overload which can each lead to organ dysfunction, most notably cardiac failure, and death if untreated. The risk of refeeding syndrome is highest for patients who are most severely malnourished, because long periods of starvation deplete total body stores of many nutrients. When nutrients are reintroduced, the body may transition too rapidly from a catabolic state to an anabolic state, resulting in rapid consumption of electrolytes and nutrients as the body tries to rebuild; this can lead to life-threatening drops in serum levels of electrolytes and glucose. The introduction of glucose to the system during refeeding also triggers an exaggerated release of insulin. Insulin leads to cellular uptake of phosphate, potassium, and magnesium, which further drops serum levels of electrolytes and micronutrients.⁶

Traditionally, severely malnourished patients were started on very low calorie diets (1000-1200 calories) to avoid refeeding syndrome, but more recent data suggests that the risks of further weight loss on such low calorie diets outweigh any benefit of preventing refeeding syndrome, especially if electrolytes and fluid status are closely monitored and managed.⁷ Daily multivitamins are often ordered on admission to replete any deficient vitamins, particularly thiamine. Thiamine deficiency can be exacerbated by refeeding because of its role as a cofactor in carbohydrate metabolism, and can acutely lead to Wernicke's encephalopathy (confusion, ataxia, and ocular disturbances).⁶ Because of the risk of volume overload resulting in pulmonary edema or cardiac failure, it is best to be judicious about the use of IV fluids. However, patients frequently experience peripheral edema from fluid retention due to their poor underlying cardiac status which does not require specific treatment but should be expected to improve as nutritional rehabilitation continues and cardiac status improves.

Nutritional rehabilitation in the inpatient setting

In the MBU, patients are usually started on 1600-2000 calorie diets, or sometimes higher based on their reported intake prior to admission. Once admitted, patients are fed with the goal of gaining 1-1.5 kg per week. Because metabolism generally increases during weight restoration, it requires more and more calories to maintain a steady rate of weight gain. In the MBU, daily meal plans are often increased in 400 calorie increments when patient weights are noted to have plateaued. Additionally, intake and output are closely monitored to take fluid balance into account when looking at daily weight changes. Patients are not expected to fully weight-restore in the inpatient setting, but rather should be hemodynamically stable, taking 100% of their required nutrition and fluid by mouth, and should meet the appropriate weight criteria (often 75-80% ideal body weight) to step down to a lower level of care.

Meals are predetermined by the dietitian, but patients are allowed one exception to accommodate strong preferences about a specific food. However, when patients request extensive substitutions or argue that whole food groups are unacceptable to them, it is

more often related to eating disorder thoughts than personal preferences about taste. For this reason, it is critical not to make concessions to their eating disorders and set boundaries around food choices at the beginning of treatment. They are also given challenge foods that may conventionally be viewed as “unhealthy” or “fattening” because, in order for patients to be able to eat a wide variety of foods in recovery, they need to be consistently exposed to foods that may make them anxious or uncomfortable so that they can overcome their fears with practice and support. They are given the option to drink a nutritional supplement if they are unwilling or unable to eat the meals that are provided, with the understanding that if they refuse nutrition in either form, they will be fed enterally through a nasogastric tube.

In this setting, it is important to begin patient and parent education regarding nutrition. I personally had a paradigm-shifting moment while listening to the dietitian discuss nutritional concerns with a patient’s parent. The parent took issue with the “unhealthy” foods that were being served to her child, including pizza and flavored drinks. The dietitian explained that there are no bad foods, only foods that have different combinations of macronutrients and micronutrients, and for her son who was starving, the healthiest option for him was to consume calorie-dense foods. I was shocked when the dietitian stated that if the patient would tolerate drinking soda, she would happily give it to him. This experience revealed to me how prevalent it is in our society to label foods as good or bad, and how these ideas can be taken too far in people predisposed to eating disorders.

Behavioral considerations

Because, by definition, eating disorders involve maladaptive behaviors related to eating, nutritional rehabilitation in an inpatient setting where patients are often admitted against their will can be very challenging. Patients may engage in behaviors that sabotage their recovery, such as refusing food, hiding or throwing away food, purging, water loading to give the appearance of weight gain while avoiding calorie increases, exercising, etc. For this reason, the MBU at Rady provides a structured environment with supervision and behavioral protocols. Patients are generally expected to eat meals in the meal room with other patients while supervised by a licensed psych tech. They are given specific time limits, 30 minutes for meals and 15 minutes for snacks, and make up for portions of the meal that they do not complete within the time limit by drinking nutritional supplements. They are observed for 30 minutes following meals in order to prevent compensatory behaviors immediately after eating.

In addition, bathrooms in patient rooms are kept locked to limit the ability to water load or purge in secret. Patients’ physical activity while inpatient is limited to what they can tolerate in their condition and what can be supervised – typically a maximum of 30 minutes of light walking per day accompanied by a staff member or family member. Urinalyses are checked to determine hydration status and whether patients are water loading (may be indicated by a low specific gravity) or purging (high urine pH). Beyond these standard protocols, individual patients may have specific behaviors that need to be addressed, and for this reason the psychology team often works with patients to come up

with behavioral plans and contracts. In addition, the psychology team plays a critical role in forming a therapeutic alliance with patients, to address their own thoughts and feelings about their diagnosis and hospitalization.

Treatment goal weight

Although the concept of ideal body weight is useful as a guide for treatment, particularly earlier on, it is important to recognize that weight restoration is not limited to reaching a particular goal weight based on normative population data. A healthy weight is a weight that supports normal growth and development in a given individual. Setting an individual patient's goal weight requires taking into account the patient's stage in puberty and their trajectories on growth curves prior to the onset of the eating disorder. This goal may need to be readjusted based on a patient's growth. For females, weight restoration also involves the resumption of spontaneous menses, particularly for bone health, but it can be difficult to predict at what weight this will occur, particularly for patients whose disease preceded menarche. Again, it is important to emphasize a physiologically healthy weight and allow for readjusting a goal weight rather than settling on one particular number.⁸

FAMILY BASED THERAPY

The only evidence based treatment for eating disorders in children and adolescents up to age 16 years is family based therapy (FBT).⁹ FBT may also be the best choice for older adolescents and young adults with supportive and involved parents. Fundamentally, FBT empowers families to play the principal role in their child's recovery, rather than relying on the efforts of the patient and therapist alone. It also values the insight that parents have about their children rather than putting any blame regarding the eating disorder on their parenting.⁹ FBT involves three phases:

- Phase 1: Restoring weight with parents taking control of feeding
- Phase 2: Transitioning control of eating back to adolescent
- Phase 3: Reviewing adolescent issues

Because FBT requires buy-in and cooperation from parents, it is important to educate parents about the life-threatening consequences and mortality associated with eating disorders. In this process of "crisis setting," it is helpful for parents to feel some level of anxiety regarding this diagnosis, as they are often more willing to step up to the plate and take on this important role in therapy when they recognize that their child's life is in danger. Another critical aspect of involving families in treatment is to separate the eating disorder from the patient. Often, families of patients have spent time fighting with their children and perceiving their eating disorder behaviors as stubbornness or disobedience. However, by differentiating between eating disorder behaviors and the patients themselves, parents are better able to direct their children through recovery while preserving warmth in the parent-child relationship, rather than arguing about specific behaviors.

During phase 1, the assumption is that it is difficult for someone struggling with an eating disorder to make appropriate choices regarding food early on in treatment, so that

role is given to parents. During this time, the goal is to break the patient's cycle of eating disorder behaviors and fully weight restore. This process is often very distressing for patients while their eating disorder thoughts are still strong and generally involves significant parent-child conflict and behavioral issues. Parents will need significant encouragement and support, which can be provided in the context of a structured program such as a partial hospitalization program. Ideally, patients concurrently participate in therapy and come to desire full recovery as well. During phase 2, the patient can slowly transition towards regaining age-appropriate control over eating. During this time, it is imperative that parents remain engaged and monitor for reoccurrence of eating disorder behaviors. The goal is for the patient to be able to maintain their weight while beginning to make their own choices about food. Lastly, in phase 3, the patient should be making their own age-appropriate choices with a plan for relapse prevention. At this time, families can address adolescent issues outside of exclusively eating disorder related concerns.

Notably, FBT is contraindicated in abusive families, because FBT inherently gives more power to parents which may lead to further abuse. Furthermore, studies show that in 15-20% of adolescent eating disorder patients, FBT yields no improvement.⁹

INDIVIDUAL AND GROUP THERAPY

In more intensive levels of care, such as partial hospitalization or residential, individual and group therapy make up a significant portion of daily programming. Group therapy is often focused on learning particular skills that can help patients cope with the emotions and urges that arise during the treatment process, particularly around meals. Dialectical behavioral therapy skills relating to emotion regulation, distress tolerance, and mindfulness are taught by therapists in order to provide patients with a wide array of coping skills they can use when necessary. In a group setting, patients are also often asked to share about their struggles, urges, and goals and ask each other questions. Through group therapy, patients have the benefit of hearing from others that are struggling with similar issues, and receiving encouragement and support from one another. During my observations, I recall being surprised multiple times by how frequently patients offered encouragement and input to one another. Adolescents that were generally guarded towards staff and ambivalent about their own treatment readily congratulated their peers for finishing meals or effectively using coping skills.

In addition to group therapy, patients are typically assigned a therapist (who may have a background in psychology, marriage and family therapy, or social work) to meet with individually, helping them to process their thoughts and emotions and come up with their own solutions. Depending on where the patient is in their desire for recovery, an individual therapist can also modify behavior by providing appropriate incentives or consequences to promote cooperation with the treatment plan. Furthermore, the therapist will often have the most insight into how the patient is doing and able to determine what interventions are required from the treatment team or by the parents. Lastly, therapists are crucial resources for parents who may need significant coaching through the process of FBT.

LEVELS OF CARE

Eating disorders require prolonged treatment, which often spans various levels of care, including:

- Inpatient - Appropriate for patients that have medical complications of their eating disorder, most commonly bradycardia, significant changes in orthostatic vital signs, or extreme low weight (<75% IBW). In this setting, the goal is to refeed the patient to the point of medical stabilization and then discharge to a lower level of care. It is critical that the patient has a safe transition plan in place prior to discharge, which often includes coordinating with accepting programs and getting insurance approval.
- Partial hospitalization - Often the most appropriate step down from inpatient care. Patients must be >75% IBW to qualify for PHP. At programs like UCSD's Partial Hospitalization Program, the goal is to provide patients and families with significant support and structure in the early stages of eating disorder treatment, especially when a patient has required inpatient care. UCSD offers 10 hour/day and 6 hour/day PHP programs during which patients are supervised during meals and participate in extensive individual and group therapy as described above. Families are also educated about eating disorders and principles of FBT, participate in support groups themselves, and learn to troubleshoot behavioral issues during family meals.
- Intensive outpatient - The next step down from PHP as patients improve and require less support. Patients must be >80-85% IBW for intensive outpatient. UCSD offers IOP at 5 days a week or 3 days a week for 3 hours per day. At this point, patients are often resuming school and attending the program after school hours. This level of care allows for continued support and supervision as patients get back to their normal daily activities.
- Outpatient - The lowest level of care for patients with eating disorders. Like in intensive outpatient, patients must be >80-85% IBW to be safely managed as an outpatient. Outpatient care should include regular appointments (typically weekly at first with subsequent spacing out) with primary care physicians, therapists, and if necessary, psychiatrists and dietitians for continued support and monitoring for relapse.
- Residential - Appropriate for patients who are at least 75% IBW and otherwise medically stable, offering therapy in a living facility with other patients with eating disorders. In this setting, family based therapy is generally not an option, given the removal of the patient from their home and family environment. May be recommended for patients when FBT is not an option, such as when family dynamics are abusive or parents are unwilling to cooperate, or when the patient has psychiatric or behavioral issues that are too severe for the parents to safely manage at home.

The length of treatment as a whole is highly variable. Inpatient hospitalizations average around 2 weeks, but can range from just a few days to several months in unusual cases. Patients often take months in PHP and IOP programs before stepping down to outpatient treatment. Even without the support from a structured program, patients and families are continuing to participate in FBT, which is designed to take place over 6-12 months. Furthermore, for patients in recovery, it is important to continue to monitor for relapse for years. It is imperative to educate patients and families that recovering from

an eating disorder is a long battle. Also, although this process is ideally linear, with decreasing support as time goes on, it is also important to note that relapses or setbacks can occur at any stage and patients may need to step up to a higher level of care if they are requiring more support.

Notably, what level of care is available for a patient is often determined by insurance or geographic concerns, rather than the patient's specific circumstances. For example, Medi-Cal does not cover any partial hospitalization or residential treatment programs unless outpatient therapy has failed after 4 weeks, and even then they are only willing to make single case agreements with a small handful of programs. Although treatment is prohibitively expensive without insurance, even good insurance coverage often requires significant out-of-pocket expense. Because insurance companies distinguish between medical and behavioral health coverage, parents who thought they had excellent medical insurance coverage may find themselves paying tens of thousands of dollars in behavioral health costs before reaching their out of pocket maximum.

Furthermore, UCSD's partial hospitalization programs are fairly unique and similar programs are not always available where patients live, although it may be the most appropriate next step in care. The MBU frequently admitted patients from LA and Orange County, and there were even patients from out of state that came through because there weren't many options for specialized inpatient care for eating disorders. I also saw a number of patients travel from out of state to get treatment at UCSD's eating disorder programs. Oftentimes, the story was that patients had failed treatment in other programs a number of times before learning about the program model used at UCSD. During a parent group session, one mother from the Bay Area commented on her frustration with the ineffective care her child had received for years in residential and outpatient treatment before stumbling upon UCSD. At this point, she was desperate for her child to recover from her eating disorder and decided to take a leave from work to move to San Diego with her teen, while her husband remained at home in the Bay Area. She noted that it was difficult for her husband to be involved in their daughter's treatment due to the distance, but it was not logistically feasible for both parents to be in San Diego. This sentiment was shared by other parents, who were also away from their spouses and other children in order to be with their child in the program.

Lastly, although some families may be able to access these higher levels of care from a financial and logistical standpoint, patients may disagree with the treatment team's recommendations and pursue other forms of treatment. For example, VT, the patient with AN mentioned before, was an adult and could legally make her own treatment decisions. Because she had tried treatment in virtually every program in southern California over her decade of battling AN, she refused to step down to either residential or PHP. She insisted on outpatient treatment after discharge from the hospital, although her parents were willing and able to pay for a higher level of care.

PSYCHIATRIC COMORBIDITIES

Eating disorders often co-occur with other psychiatric illnesses. Neurobiological data suggests that individuals with eating disorders have a certain temperament that predisposes them to developing the eating disorder. In the case of AN, patients have often been high-achieving, perfectionistic, and anxious since childhood. As a result, general anxiety disorder and OCD are commonly comorbid with AN since they share a general temperamental tendency. ARFID may also be associated with anxiety and OCD, particularly in patients whose restricting behaviors stem from fears around eating. BN patients may have had impulsive tendencies since childhood and have higher rates of bipolar disorder and substance use disorder. Depression and substance use disorders are also common comorbidities associated with multiple eating disorder diagnoses. It is critical to assess for psychiatric comorbidities during treatment of eating disorders to identify any roadblocks to treatment that may be addressed by psychiatric medications as well as to provide appropriate care for the patient as a whole. However, this picture may be confounded by the presence of depression or anxiety secondary to malnutrition itself. Therefore, it is also important to recognize that in eating disorders, the priority is to restore weight and change eating disorder behaviors first. The identification and treatment of comorbid psychiatric conditions should not distract from that, especially because psychiatric symptoms may resolve with weight restoration.

PSYCHOTROPIC MEDICATIONS

The role of psychiatric medications in eating disorders varies by specific diagnoses. There are no medications FDA-approved with a specific indication for AN, so psychiatric medications have generally been limited to the treatment of comorbid psychiatric conditions, which is certainly important given the prevalence of psychiatric comorbidities. However, case studies and anecdotal evidence suggests that atypical antipsychotics such as Zyprexa (olanzapine) or Abilify (aripiprazole) can be useful in AN patients. AN is thought to be a dopamine-related process, which explains why dopamine antagonists may be beneficial. In the acute setting, Zyprexa is especially useful for agitated patients and can be used as a PRN medication. However, Abilify has the more favorable side effect profile between the two and is used more frequently in the outpatient setting. One particular study has suggested that Prozac (fluoxetine) can be helpful for relapse prevention in weight-restored AN patients. However, those findings were not corroborated in further studies, so it is not standard practice at UCSD to start Prozac specifically for relapse prevention.

For BN, however, Prozac has been FDA approved for treatment even in the absence of anxiety or depression. Vyvanse (lisdexamfetamine dimesylate) is approved for the treatment of BED. These medications have demonstrated benefit in randomized controlled trials.

In ARFID patients, Remeron (mirtazapine) has also been noted to be helpful, although there are no published randomized control trials to study this off-label use. Remeron binds histaminergic and serotonergic receptors and is known to stimulate appetite and improve gut motility. Remeron also has significant antidepressant effects and anecdotally appears to improve mood and anxiety symptoms in patients with eating disorders

when used. The exact mechanism of action of Remeron on ARFID is unclear since the pathophysiology of ARFID has not been well elucidated, but it may be working on receptors in both the brain and the gastrointestinal tract to minimize symptoms. Beyond the drugs that have been discussed, there are many other medications that may be beneficial for these disorders, and it is valuable to recognize that because every patient's biology differs, it may take trial and error to identify medications that are particularly helpful for a patient's eating disorder.

CONCLUSIONS

My experiences observing the treatment of eating disorders in various settings have been incredibly valuable in shattering my many misconceptions about eating disorders and providing a solid framework to understand what they are and how to effectively treat them. It was remarkable how frequently we admitted patients who were diagnosed late with eating disorders after an unnecessarily extensive organic workup for weight loss and no previous discussion about psychiatric contributors, often because community physicians may not know when to suspect an eating disorder or consider it a stigmatized diagnosis. My initial hope for this project was to be better equipped to recognize eating disorders and understand my role as a future general pediatrician in a multidisciplinary approach to treatment. I am happy to say that I would feel very comfortable addressing eating disorders with patients in the future and helping them navigate the proper channels for treatment. Furthermore, as I have observed patients and parents talking about their experiences, I came to appreciate how incredibly challenging it is for an individual and a family to deal with an eating disorder. I now feel such empathy for this patient population that I once wrote off as simply "difficult." I hope to carry the knowledge and compassion I gained into my intern year as a pediatric resident to provide good care for my future patients.

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