

Treatment Outcomes Report



Eating Recovery Center Treatment Outcomes Report, 2021 Edition

Elevating Scientific Rigor and Transparency in Outcomes Reporting

Dear Reader:

One of the greatest frustrations providers report is trying to obtain outcome results from eating disorder treatment programs. A comprehensive review of treatment program websites indicates that very few programs report any data-based outcomes, and data that is reported often lacks research rigor. The information that follows is designed to help professionals, as well as the patients and families with whom they work, understand the challenges researchers face in measuring eating disorder treatment effectiveness and how to critically evaluate data that is presented. Treatment effectiveness and patient satisfaction data from Eating Recovery Center is presented with the intention of reporting on our outcomes and providing examples of how to become a discriminating consumer of outcome data.



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CONTENTS

- **1** The Challenge of Measuring Treatment Effectiveness
- 2 Patient Satisfaction
- **3** Adult Program Patient Satisfaction
- **4** Child and Adolescent Program Patient Satisfaction
- **5** Evaluating Change from Admission to Discharge
- **6** Evaluating Change from Admission to Discharge: Adult Programs
- 7 Adult Weight Restoration
- **8** Adult Changes in Eating Disorder Pathology
- **9** Adult Changes in Depression
- **10** Adult Changes in Anxiety
- **11** Adult Changes in Obsessive-Compulsive Thoughts and Behaviors

- **12** Adult Changes in Impact of Eating Disorders on Quality of Life
- **13** Evaluating Change From Admission to Discharge: Child and Adolescent Programs
- **14** Child and Adolescent Weight Restoration
- **15** Child and Adolescent Changes in Eating Disorder Pathology
- **16** Child and Adolescent Changes in Depression
- 17 Child and Adolescent Changes in Anxiety
- **18** Child and Adolescent Changes in Obsessive-Compulsive Thoughts and Behaviors
- **19** Child and Adolescent Changes in Impact of Eating Disorders on Quality of Life
- **20** Other Considerations When Evaluating Outcome Data



THE CHALLENGE OF MEASURING TREATMENT EFFECTIVENESS

One of the greatest frustrations providers report is trying to obtain outcome results from eating disorder treatment programs. A comprehensive review of treatment program websites indicates that very few programs report any data-based outcomes, and data that is reported often lacks research rigor. The information that follows is designed to help professionals, as well as the patients and families with whom they work, understand the challenges researchers face in measuring eating disorder treatment effectiveness and how to critically evaluate the data presented. Patient satisfaction and treatment effectiveness data from Eating Recovery Center is presented with the intention of reporting on our outcomes and providing examples of how to become a discriminating consumer of outcome data.

Good outcome data usually contains assessments at the time of admission, discharge and annual follow-up. The majority of patients discharged from intensive treatment programs continue to receive multiple forms of treatment during the follow-up period. Treatment during this follow-up period is often delivered by professionals unaffiliated with the intensive treatment sites and can vary widely. While follow-up treatment is typically recommended, and often very helpful to the patient, it unfortunately makes it difficult to determine the lasting effects of the initial intensive treatment. The example below illustrates this point.

A common year-long sequence of care for a patient seeking eating disorder treatment could include 60 days of intensive treatment (at the inpatient, residential and/or partial hospitalization levels of care), followed by outpatient care for 10 months after discharge from the intensive care setting. During the follow-up treatment, patients may see an individual and/or family therapist, a psychiatrist may add, remove or adjust their medications several times, and they may briefly attend an intensive outpatient program (IOP). While these follow-up treatments are often very helpful to the patients, it makes it difficult to attribute the patient's current functioning to any one aspect of their year-long treatment. There are simply too many treatments occurring to determine which interventions are responsible for what portions of a patient's functioning. Thus, while follow-up data offers useful information on the patient's progression of functioning, it does not speak to the treatment effectiveness of the intensive treatment program.

While some programs offering year-long treatment services may be able to comment on treatment effectiveness, Eating Recovery Center rarely treats patients for this long and at one time. For this reason, the current data speaks only to changes between admission and discharge, when treatment at Eating Recovery Center can reasonably be inferred to be the primary treatment and driving factor of this change.

PATIENT SATISFACTION

Patient satisfaction refers to the level of satisfaction patients report following a course of treatment. Ideally, patients will feel good about the care they have received; however, it is important to note that there is very little research demonstrating any correlation between patient satisfaction and treatment effectiveness. In fact, in the field of eating disorders, full weight restoration of a patient with anorexia nervosa can result in patient dissatisfaction. This is particularly true if the patient does not have adequate time to psychologically integrate changes in their size and shape during their time in the structured treatment environment.

When evaluating patient-satisfaction data, it is important to know what question is being asked, what type of scale is being used, and what responses are being reported. Be wary of data where a segment of the program's admissions has been systematically excluded, the most common of which are patients who leave the program early. These patients are often excluded from patient-satisfaction data because they are the most dissatisfied with the program. There are no systematic exclusions of data in the results presented in this report.



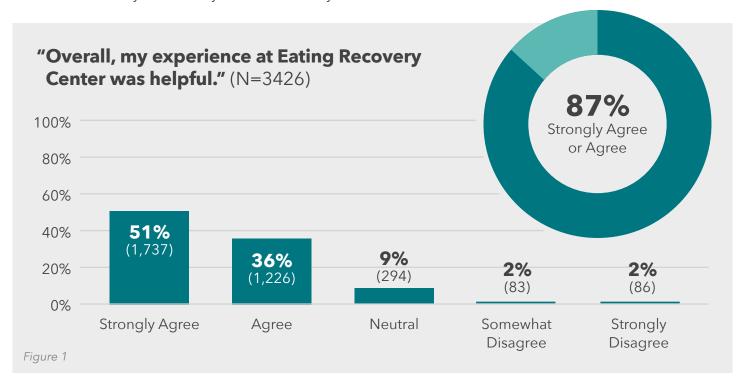
ADULT PROGRAMS

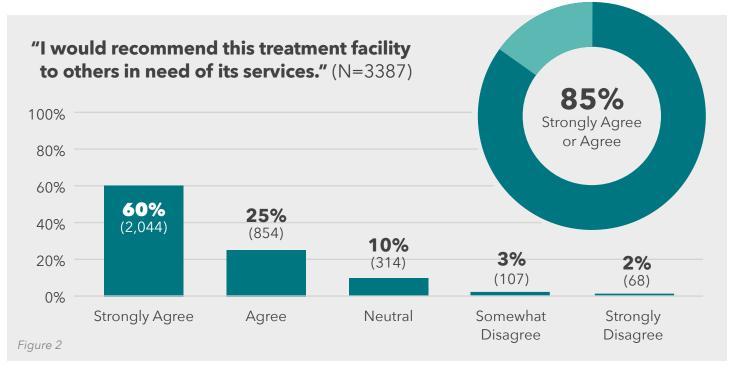
Patient Satisfaction: Adult Inpatient/Residential and Partial Hospitalization Programs

Experts in the field of professional quality assessment focus on two questions:

(1) Overall, was the treatment helpful, and (2) would the patient refer someone to the program?

Figures 1 and 2 present Eating Recovery Center's Adult Inpatient/Residential and Partial Hospitalization program-satisfaction scores for these two questions for patients discharged between 2010 and 2018. Every patient who discharged from Eating Recovery Center was asked to complete a patient-satisfaction survey, and no data was systematically excluded for any reason.





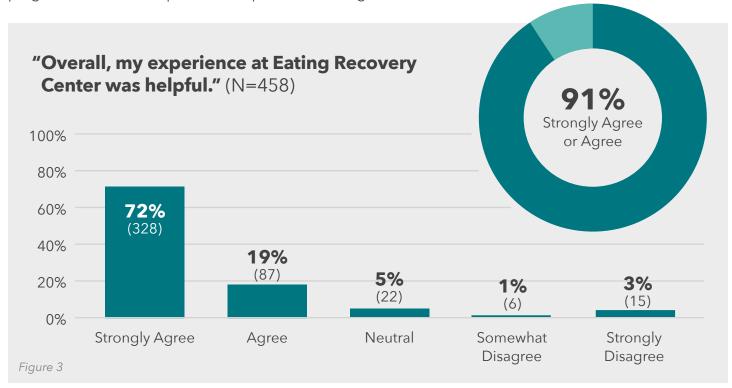
CHILD AND ADOLESCENT PROGRAMS

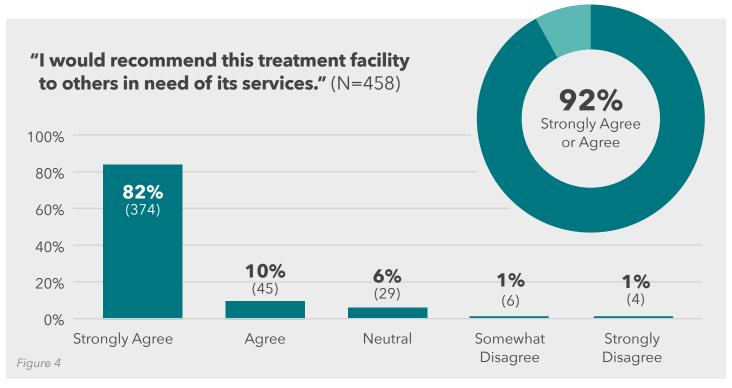
Parent Satisfaction: Child and Adolescent Programs

The same two satisfaction questions are asked of parents whose children are in the program:

(1) Overall, was the treatment helpful, and (2) would the patient refer someone to the program?

Figures 3 and 4 present parent-satisfaction scores for Eating Recovery Center's Child and Adolescent program for these two questions for patients discharged between 2010 and 2018.





EVALUATING CHANGE FROM ADMISSION TO DISCHARGE

The outcome data that warrants the most attention are those that address the change that occurs from admission to discharge, because follow-up data is usually confounded by the treatments patients receive after they discharge. The following pages present how Eating Recovery Center patients have changed from admission to discharge across a range of factors that can affect long-term recovery.

Treatment centers should use questionnaires that have been reviewed and accepted by the scientific community and assess changes in both eating disorder symptoms and co-occurring illnesses such as mood disorders. Most treatment centers that publish their outcome data report these data in terms of average symptom levels at admission and discharge. While this method is both common and easy to understand, it can be misleading because the reported averages may or may not accurately represent patient symptom levels due to variability within a given sample of patients. To address this issue, we report our treatment outcomes in terms of both admission and discharge scores, and in terms of effect sizes.¹

Effect sizes add additional meaning to outcomes because they are based on both the amount of symptom change from admission to discharge, and the amount of variability in symptom levels across admission and discharge. All effect sizes reported in this brochure are based on statistically significant differences in symptoms from admission to discharge.

All results reported in this brochure are statistically significant at the "p<.01" or "p<.001" levels unless otherwise noted vary explicitly. A statistically significant change from admission to discharge means that it is very unlikely that this change is due to random change and is therefore very likely due to the effects of treatment. If there is no statistically significant difference between admission and discharge for a given outcome, the effect size is considered to be 0. Larger effect sizes indicate a greater degree of improvement. Effect sizes between 0 and .3 indicate minimal improvement, effect sizes between .3 and .5 indicate a small amount of improvement, effect sizes between .5 and .8 indicate moderate improvement, and effect sizes over .8 indicate large amounts of improvement.

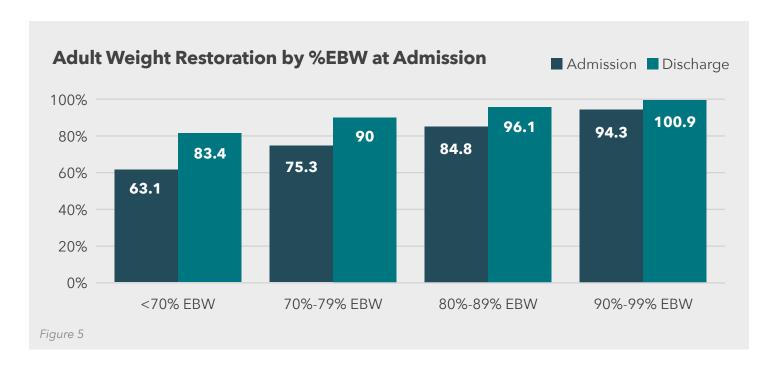
It is important to note that no result or effect size on any given measure indicates that patients achieved complete recovery with regard to that outcome. Rather, larger effect sizes indicate that, on average, patients made clinically significant progress toward recovery. Many patients, therefore, will have improved more or less than this average, and most patients will likely have benefited from additional treatment after discharge to continue their individual recovery process.

^{1.} Effect size is measured by the Cohen's D statistic. The formula for this statistic is: (Average Admission Score - Average Discharge Score)/((Standard Deviation in Admission Scores + Standard Deviation in Discharge Scores)/2).

EVALUATING CHANGE FROM ADMISSION TO DISCHARGE: ADULT PROGRAMS

Adult Weight Restoration

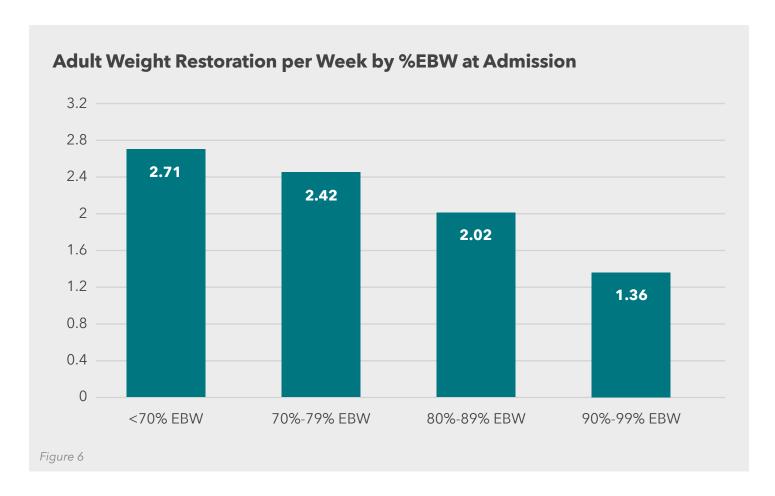
From 2014 to 2018, 1,966 admitted adult patients (79% of all adult patients) were identified as in need of weight restoration. At admission, the average patient in need of weight restoration was 88% of expected body weight (EBW). Of patients in need of weight restoration at admission, 21% were 90%-99% EBW, 31% were 80%-89% EBW, 29% were 70%-79% EBW, and 19% were below 70% EBW. Figure 5 shows the average percent of EBW at admission and discharge for patients of different weight categories at admission. Research has shown that a strong predictor of recovery from an eating disorder among adult patients with anorexia nervosa is achieving greater than 85.8% of EBW at discharge.² Eighty-two percent of all patients achieved this threshold by discharge. Of the patients in need of weight restoration who admitted at a weight below this threshold, 68% achieved this threshold by discharge. All changes were statistically significant beyond p<.001. The Cohen's D effect size was large (.93).



Lock, J., Agras, W.S., Grange, D., Couturier, J., Safer, D., & Bryson, S.W. (2013). Do end of treatment assessments predict outcome at follow-up in eating disorders? International Journal of Eating Disorders, 46(8), 771-778.

ADULT WEIGHT RESTORATION

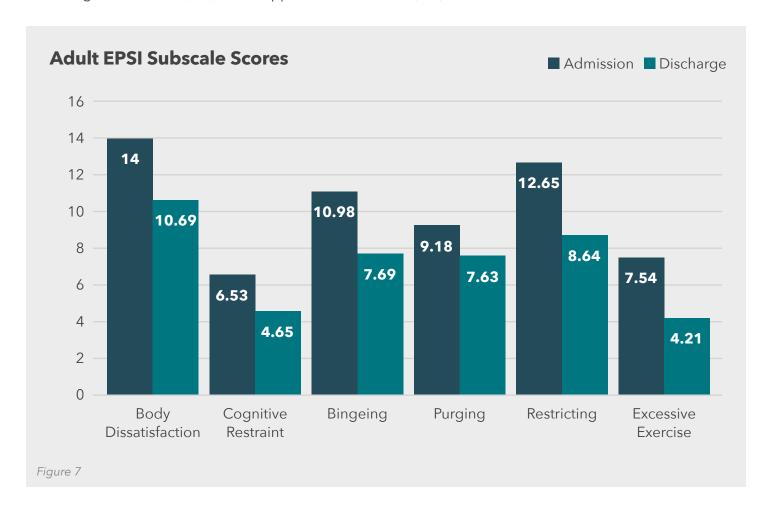
From 2014 to 2018, of the admitted patients identified as in need of weight restoration, the average length of stay was 8.3 weeks and the average patient gained 2.1 pounds per week during treatment, which exceeds the 2 pounds per week threshold established by the American Psychiatric Association.³ Figure 6 shows the average weight restoration per week for patients of different weight categories at admission. The average length of stay for patients at less than 70% of EBW at admission was 10.3 weeks. The average length of stay for patients between 70% and 80% EBW was 8.7 weeks. The average length of stay for patients between 80% and 90% EBW was 8.8 weeks. The average length of stay for patients between 90% and 99% was 6.7 weeks.



American Psychiatric Association. (2010). Practice quideline for the treatment of patients with eating disorders (3rd ed.). Washington, DC: Yager, J., Devlin, M.J., Halmi, K.A., Herzog, D.B., Mitchell, J.E., Powers, P., & Zerbe, K.J.

ADULT CHANGES IN EATING DISORDER PATHOLOGY

Eating Recovery Center uses the Eating Pathology Symptom Inventory (EPSI) to measure various domains of eating disorder pathology.⁴ Figure 7 shows the admission and discharge scores for each eating disorder pathology subscale of the EPSI. All changes were statistically significant beyond p<.001. Cohen's D effect sizes ranged from small (.42) to the upper end of medium (.77).

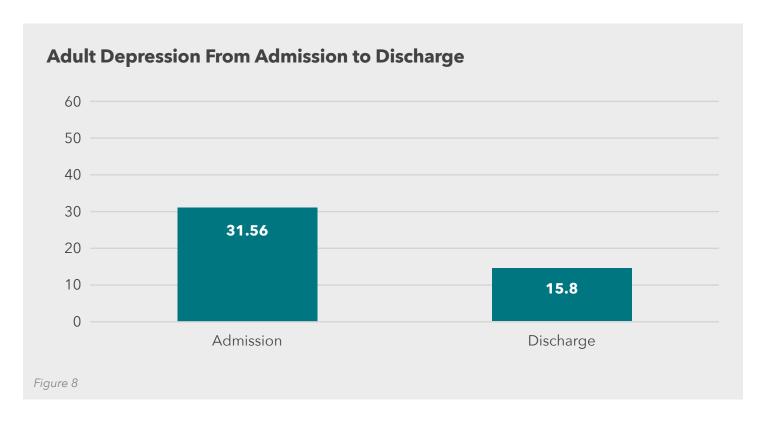


Forbush, K. T., Wildes, J. E., Pollack, L. O., Dunbar, D., Luo, J., Patterson, K., ... & Bright, A. (2013). Development and validation of the Eating Pathology Symptoms Inventory (EPSI). Psychological Assessment, 25(3), 859-878.

ADULT CHANGES IN DEPRESSION

Sixty-seven percent of patients admitted to inpatient/residential treatment programs also struggle with mood disorders such as depression and anxiety. In fact, the severity of depression has been found to be a predictor of poor outcomes in several studies. Eating Recovery Center uses the Beck Depression Inventory 2nd edition (BDI-II), a widely used questionnaire assessing psychological mood disorders in patients with eating disorders, to measure changes in depression.⁵

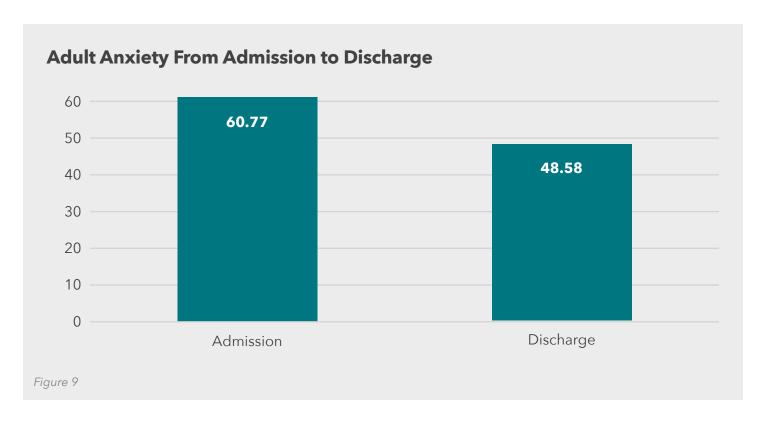
Of the patients admitted and discharged from adult services at Eating Recovery Center between 2014 to 2018, 81% admitted with moderate to severe depression. Of those patients with moderate to severe depression, 61% dropped to mild or minimal depression by discharge. Figure 8 shows the average admission and discharge depression scores. Change was statistically significant beyond p<.001. The Cohen's D effect size was large (1.24).



ADULT CHANGES IN ANXIETY

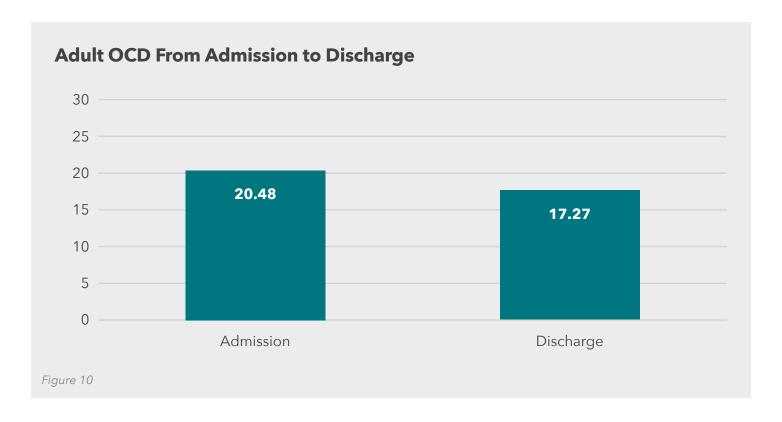
As with depression, anxiety has also been shown to be a poor predictor of outcomes in the treatment of eating disorders. Eating Recovery Center uses the State-Trait Anxiety Inventory (STAI) to measure changes in anxiety.6 State anxiety refers to how a person feels at the moment, while trait anxiety refers to how anxious a person generally feels. There were minimal differences between the state and trait measures, and thus only state anxiety is presented here.

Of the patients admitted and discharged from adult services at Eating Recovery Center between 2014 to 2018, 83% reported reductions in state anxiety during treatment. This number is especially large in light of the fact that treatment removes many avoidance behaviors that can temporarily alleviate anxiety. Figure 9 shows the average admission and discharge anxiety scores. Change was statistically significant beyond p<.001. The Cohen's D effect size was large (.97).



ADULT CHANGES IN OBSESSIVE-COMPULSIVE THOUGHTS **AND BEHAVIORS**

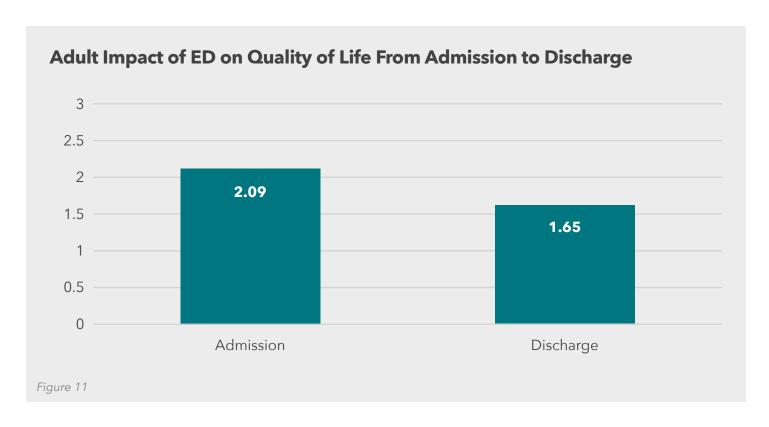
Eating Recovery Center uses the Obsessive-Compulsive Index - Revised (OCI-R) to measure obsessive and compulsive thoughts and actions indicative of obsessive-compulsive disorder symptoms.⁷ Of the patients admitted to adult services at Eating Recovery Center between 2014 to 2018, 45% met criteria for clinically significant symptoms of OCD (defined as >20 on OCI-R). Of those patients, 37% fell below the clinical cutoff by discharge. Figure 10 shows the average admission and discharge obsessive-compulsive scores. Change was statistically significant beyond p<.001. The Cohen's D effect size was small (.37).



^{7.} Foa, E. B., Huppert, J. D., Leiberg, S., Langner, R., Kichic, R., Hajcak, G., et al. (2002). The obsessive-compulsive inventory: development and validation of a short version. Psychological Assessment, 14, 485-495.

ADULT CHANGES IN IMPACT OF EATING DISORDERS ON QUALITY OF LIFE

In an effort to measure the impact of patients' eating disorders on their overall quality of life, Eating Recovery Center measures quality of life with the Eating Disorder Quality of Life scale (EDQOL).8 The EDQOL has several domains, reflecting psychological, physical and cognitive, financial, and school/ work quality of life. The average across each of these domains is reported. Figure 11 shows the average admission and discharge scores for the impact of eating disorders on quality of life. Of the patients admitted to adult services at Eating Recovery Center between 2014 to 2018, 77% reported reductions in the degree to which their eating disorder negatively impacted their quality of life. Change was statistically significant beyond p<.001. The Cohen's D effect size was medium (.75).

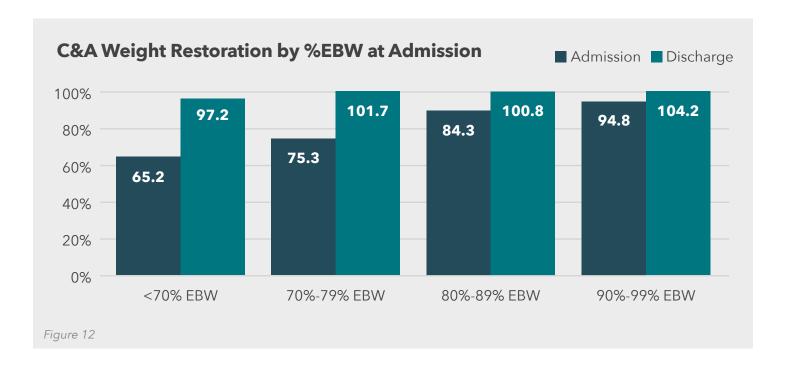


^{8.} Engel, S. G., Wittrock, D. A., Crosby, R. D., Wonderlich, S. A., Mitchell, J. E., & Kolotkin, R. L. (2006). Development and psychometric validation of an eating disorder-specific health-related quality of life instrument. International Journal of Eating Disorders, 39(1), 62-71.

EVALUATING CHANGE FROM ADMISSION TO DISCHARGE: CHILD AND ADOLESCENT PROGRAMS

Child and Adolescent Weight Restoration

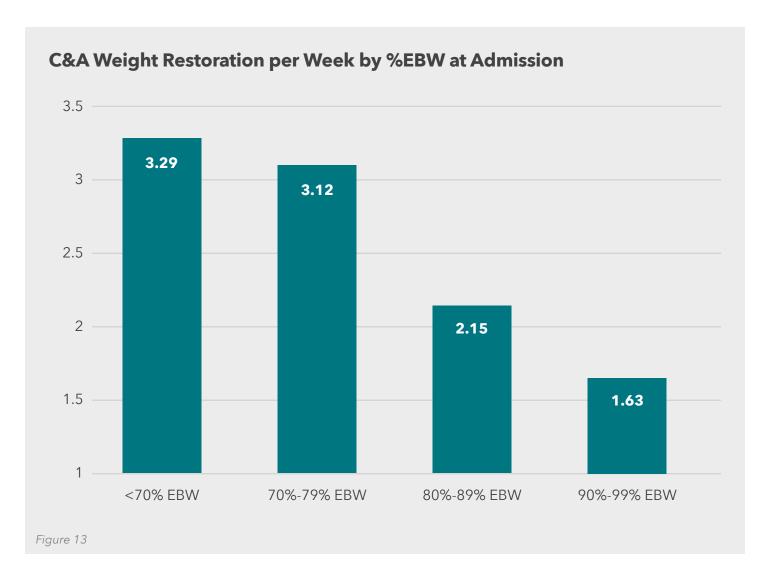
From 2014 to 2018, 343 admitted child and adolescent (C&A) patients (86% of all C&A patients) were identified as in need of weight restoration. At admission, the average patient in need of weight restoration was 86% of expected body weight (EBW). Of patients in need of weight restoration at admission, 21% were 90%-99% EBW, 34% were 80%-89% EBW, 32% were 70%-79% EBW, and 13% were below 70% EBW. Figure 12 shows the average percent of EBW at admission and discharge for patients of different weight categories at admission. Research has shown that a strong predictor of recovery from an eating disorder among adolescent patients with anorexia nervosa is achieving greater than 95.2% of EBW at discharge.² Of the patients in need of weight restoration who admitted at a weight below this threshold, 80% achieved this threshold by discharge. All changes were statistically significant beyond p<.001. The Cohen's D effect size was large (1.52).



Lock, J., Agras, W.S., Grange, D., Couturier, J., Safer, D., & Bryson, S.W. (2013). Do end of treatment assessments predict outcome at follow-up in eating disorders? International Journal of Eating Disorders, 46(8), 771-778.

CHILD AND ADOLESCENT WEIGHT RESTORATION

From 2014 to 2018, of the admitted patients identified as in need of weight restoration, the average length of stay was 9.4 weeks and the average patient gained 2.4 pounds per week during treatment, which exceeds the 2 pounds per week threshold established by the American Psychiatric Association.³ Figure 13 shows the average weight restoration per week for patients of different weight categories at admission. The average length of stay for patients at less than 70% of EBW at admission was 10.9 weeks. Average length of stay for patients between 70% and 80% EBW was 10.1 weeks. Average length of stay for patients between 80% and 90% EBW was 9.3 weeks. Average length of stay for patients between 90% and 99% was 7.5 weeks.

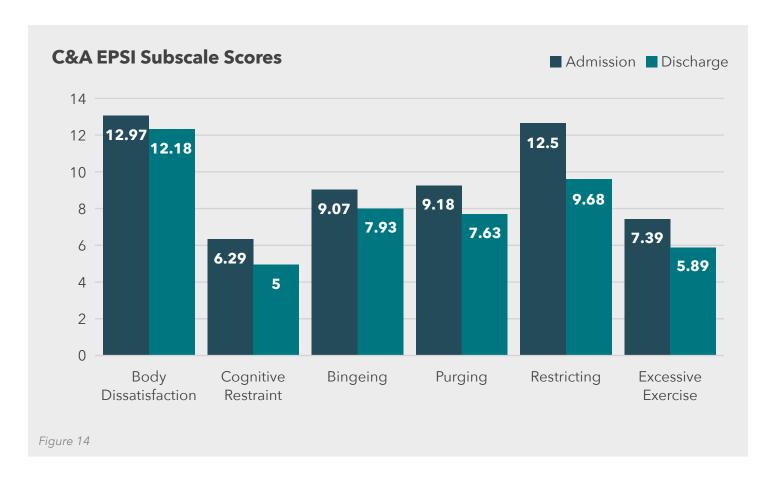


American Psychiatric Association. (2010). Practice quideline for the treatment of patients with eating disorders (3rd ed.). Washington, DC: Yager, J., Devlin, M.J., Halmi, K.A., Herzog, D.B., Mitchell, J.E., Powers, P., & Zerbe, K.J.

CHILD AND ADOLESCENT CHANGES IN EATING **DISORDER PATHOLOGY**

Eating Recovery Center uses the Eating Pathology Symptom Inventory (EPSI) to measure various domains of eating disorder pathology for the child and adolescent program.9 Figure 14 shows the admission and discharge scores for each eating disorder pathology subscale of the EPSI. All changes were statistically significant beyond p<.001, with the exception of body dissatisfaction and purging, which did not show statistically significant changes over treatment. Cohen's D effect sizes were all within the small range (.33 to .44).

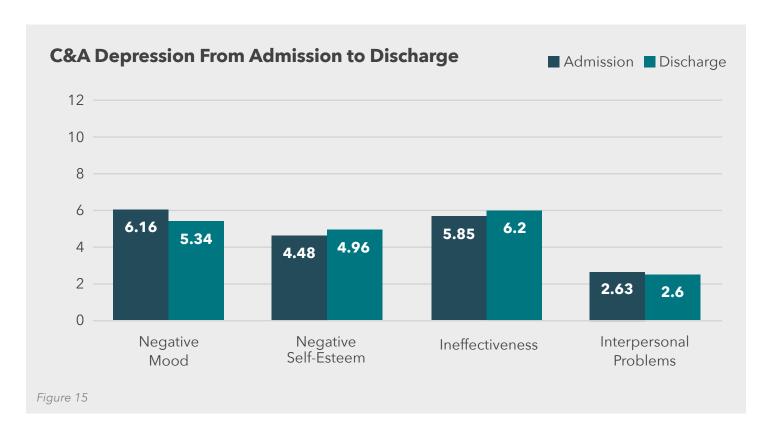
Because of a change in eating disorder assessments during data collection, the sample size is relatively lower for EPSI in child and adolescent than other outcomes presented (N=105). Nevertheless, this sample size is sufficient to give some degree of confidence in the results.



^{9.} Forbush, K. T., Wildes, J. E., Pollack, L. O., Dunbar, D., Luo, J., Patterson, K., ... & Bright, A. (2013). Development and validation of the Eating Pathology Symptoms Inventory (EPSI). Psychological Assessment, 25(3), 859-878.

CHILD AND ADOLESCENT CHANGES IN DEPRESSION

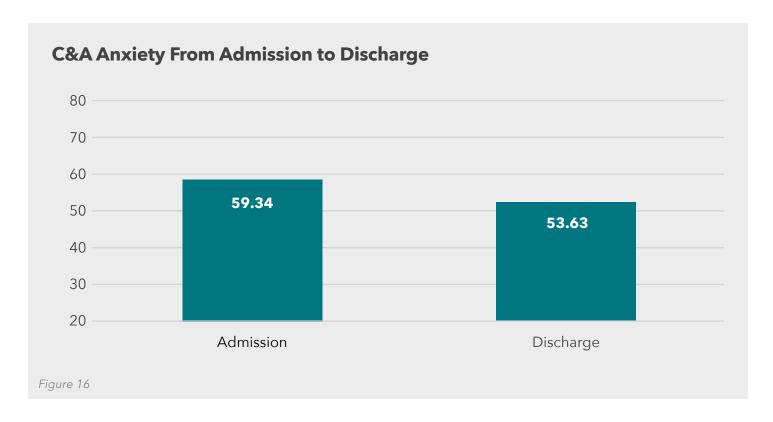
Eating Recovery Center uses the Child Depression Inventory 2nd edition (CDI-2), a widely used guestionnaire assessing psychological mood disorders in child and adolescent patients with eating disorders, 10 to measure changes in depression in children and adolescents. The CDI-2 comprises four subscales to measure adolescents' negative mood, negative self-esteem, ineffectiveness and interpersonal problems. Figure 15 shows the average admission and discharge scores across these four depression subscales. Of the patients admitted and discharged from child and adolescent services at Eating Recovery Center between 2014 to 2018, 65% saw reductions in their depression scores averaged across subscale. Negative mood was the only subscale that showed statistically significant reductions over time. Cohen's D effect size for negative mood was small (.27).



CHILD AND ADOLESCENT CHANGES IN ANXIETY

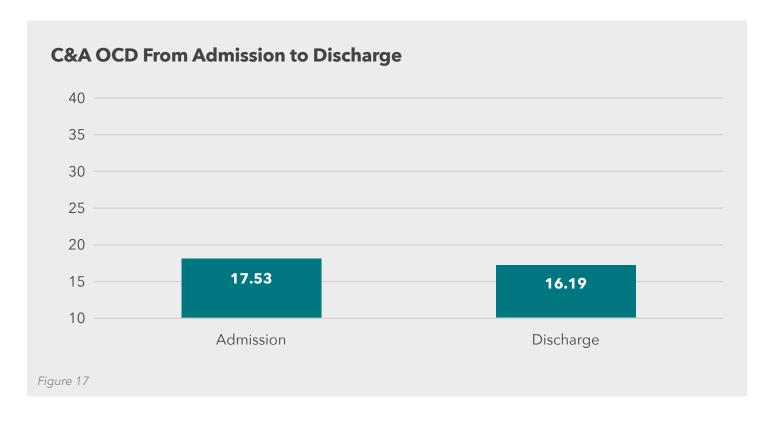
Eating Recovery Center uses the State-Trait Anxiety Inventory (STAI) to measure changes in anxiety in child and adolescent patients. State anxiety refers to how a person feels at the moment, while trait anxiety refers to how anxious a person generally feels. As with adults, there were minimal differences between the state and trait measures, and thus only state anxiety is presented here.

Of the patients admitted and discharged from child and adolescent services at Eating Recovery Center between 2014 to 2018, 64% reported reductions in state anxiety during treatment. This number is especially large in light of the fact that treatment removes many avoidance behaviors that can temporarily alleviate anxiety. Figure 16 shows the average admission and discharge anxiety scores. Change was statistically significant beyond p<.001. The Cohen's D effect size was in the upper range of small (.44).



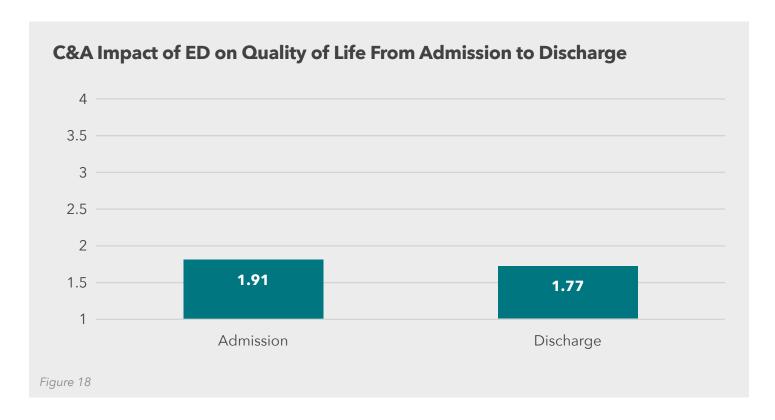
CHILD AND ADOLESCENT CHANGES IN **OBSESSIVE-COMPULSIVE THOUGHTS AND BEHAVIORS**

Eating Recovery Center uses the Obsessive-Compulsive Index - Revised (OCI-R) to measure obsessive and compulsive thoughts and actions indicative of obsessive-compulsive disorder symptoms in child and adolescent patients. Of the patients admitted to child and adolescent services at Eating Recovery Center between 2014 to 2018, 41% met criteria for clinically significant symptoms of OCD (defined as >20 on OCI-R). Of those patients, 59% fell below the clinical cutoff by discharge. Figure 17 shows the average admission and discharge obsessive-compulsive scores. Change was statistically significant beyond p<.001. The Cohen's D effect size was medium (.56).



CHILD AND ADOLESCENT CHANGES IN IMPACT OF EATING DISORDERS ON QUALITY OF LIFE

In an effort to measure the impact of child and adolescent patients' eating disorders on their overall quality of life, Eating Recovery Center measures quality of life with the Eating Disorder Quality of Life scale (EDQOL). The EDQOL has several domains, reflecting psychological, physical and cognitive, financial, and school/work quality of life. The average across each of these domains is reported. Figure 18 shows the average admission and discharge scores for the impact of eating disorders on quality of life. Of the patients admitted to and discharged from child and adolescent services at Eating Recovery Center between 2014 to 2018, 61% reported reductions in the degree to which their eating disorder negatively impacted their quality of life. Change was statistically significant beyond p<.001. The Cohen's D effect size was small (.33).



OTHER CONSIDERATIONS WHEN EVALUATING OUTCOME DATA

Comparing Apples to Apples

Not all eating disorder treatment programs treat the same level of severity, and the field of eating disorders has yet to adopt a universal method for indexing illness severity. Realistically, programs that are willing to treat more severely ill patients will likely report poorer results compared to programs that systematically select less ill patients for admission. If treatment programs are using standardized measurement instruments - such as the Beck Depression Inventory 2nd Edition (BDI-II) - there is usually normative data for mild, moderate and severe illness acuity that can help gauge severity. For example, if two different programs are presenting results from the BDI-II, it is important to note the level of severity of depression at admission.

Definitions of Recovery: Watch Out for "Sort of True"

Another area in which the field of eating disorder treatment has struggled has been reaching consensus regarding the definition of "recovery." The closest the field has come to consensus is the definition of "remitted." For anorexia nervosa, remitted is often defined as being weight restored above 95% expected body weight (EBW) and normalization of thoughts and attitudes that relate to the psychological aspects of the illness, such as drive for thinness and body dissatisfaction. For bulimia nervosa, remitted is often defined as having zero binge/purge episodes over the prior three-month period (note that controversy still remains regarding the necessary length of time that constitutes abstinence) and normalization of the same thoughts and attitudes as mentioned with anorexia nervosa.

This lack of clarity around a universal definition of recovery creates a vulnerability for what is referred to as "sort of true" criteria for recovery. For example, when programs report the percentage of patients who no longer meet criteria for anorexia nervosa and bulimia nervosa, the implication is that they are remitted since they no longer meet criteria for a diagnosis. The threshold weight criteria for anorexia nervosa is a weight that is minimally normal (adult) or expected (child or adolescent), while the threshold criteria for the diagnosis of bulimia nervosa dictates that the patient is binge eating and purging at least once weekly over the prior three-month period. Technically, if a patient has attained a minimally normal weight or is binge eating once every other week, they no longer meet the diagnostic criteria for these respective disorders. While this is technically true (or "sort of true"), it may not be clinically meaningfull. Very few clinicians believe that someone who has attained a minimally normal weight and/or is engaging in binge/purge episodes every other week is remitted.

Percentage Reduction in Symptoms

Some programs will report a percentage reduction in symptoms without reporting the actual frequency of the behaviors. If a patient reduces their binge/purge episodes from 10 times per day to one time per day, the treatment program can claim having reduced their binge/purge frequency by 90%. While this outcome is statistically significant and looks quite impressive as a measure of treatment efficacy, the fact remains that the patient is still binge eating/purging daily. This is an instance where the change may be statistically significant, but less clinically meaningful.

FINAL COMMENT

It is important for patients and families to know that clinicians and scientists of the eating disorder field are equally frustrated with the lack of empirical data on the effectiveness of intensive treatment of eating disorders. Our research team is dedicated to advancing the science of eating and mood disorder treatment overall, as well as the aspects of treatment at ERC Pathlight that lead to long-term and sustainable recovery.

