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Parental self-efficacy: Longitudinal impact on clinical outcomes across levels of care in adolescent anorexia nervosa

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Abstract

Objective: Parental self-efficacy in the domain of weight restoration for adolescents with restrictive eating disorders is central to success in family-based interventions. We sought to characterize this parental self-efficacy during a brief hospitalization for medical stabilization and follow-up among patients with anorexia nervosa (AN) or atypical AN (AAN) enrolled in the StRONG clinical trial to understand the potential impact of inpatient treatment on caregiver empowerment.

Methods: Patients were enrolled upon hospital admission and refed per protocol. We examined correlates of the Parents Versus Anorexia (PVA) scale, a measure of parental self-efficacy in the domain of weight restoration, at admission, discharge, 10-days, 1-month, and 3-months post-discharge. Multi-level models evaluated associations among PVA scores and change in %median BMI and Eating Disorder Examination- Questionnaire (EDE-Q) global scores over 3-months post-discharge.

Results: Parents of $N = 67$ adolescents and young adults $M(SD)$ age 15.79 (2.20) years and 85.00 (11.86) %median BMI participated. PVA scores did not change significantly during hospitalization ($p = .053$), which lasted on average 10.7 ± 4.5 days. PVA scores increased post-discharge ($p = .009$), with significant increase between discharge and 1-month-post-discharge ($p = .045$). PVA scores were not associated with subsequent clinical outcomes. Rather, a main effect of time significantly predicted higher %median BMI and improved EDE-Q scores ($p < .001$).

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Discussion: The finding that parental self-efficacy did not deteriorate during the inpatient stay is promising given the medical necessity of hospitalization to ensure short-term safety in some cases and the importance of parental self-efficacy to support long-term recovery.

Keywords

anorexia nervosa; parental self-efficacy; inpatient; hospitalization; outpatient; weight gain; eating disorders; adolescents

Introduction

Anorexia nervosa (AN) and atypical AN (AAN) are serious psychiatric illnesses, for which specialty treatment is typically required (Kaye & Bulik, 2021; Walsh et al., 2021). For young people with AN and AAN, family-based treatment (FBT) is recommended as a first-line treatment by all published guidelines (Couturier et al., 2020; Hay et al., 2014; Hilbert et al., 2017). In the initial phase of manualized FBT for AN and AAN (Lock & Le Grange, 2015), parents are guided by the treating clinician to assume full responsibility for the renourishment of their child as well as preventing any eating disorder (ED) behaviors that would impede weight restoration. Over time, as the disorder begins to retreat, parents gradually restore independence to their child in navigating their own eating behavior in a developmentally appropriate manner.

Within this therapeutic context, parental self-efficacy in the domain of weight restoration is hypothesized to be the primary mechanism of action in FBT (Byrne et al., 2015). In this treatment, caregivers are encouraged and supported to bring about the recovery of their child. AN and AAN can be pernicious and treatment-resistant (Walsh, 2013); in the face of this challenge, evidence supports the role of parental self-efficacy as a key component of FBT success. Specifically, FBT aims to increase parental self-efficacy early in treatment for AN and AAN (Sadeh-Sharvit et al., 2018), and parental self-efficacy has been shown to mediate significantly greater weight gain when compared to an individual adolescent-focused approach (Byrne et al., 2015) or when compared to a systemic family therapy approach (Sadeh-Sharvit et al., 2018).

FBT has also been shown to reduce the need for hospitalization (Lock et al., 2016; Wallis et al., 2018); however, many young people with AN will still require medical or psychiatric hospitalization at some point (Herpertz-Dahlmann et al., 2021; “Medical Management of Restrictive Eating Disorders in Adolescents and Young Adults,” 2022; Peebles & Sieke, 2019). In a large study of outpatient medical care, as many as 40% of patients referred for AN and AAN were hospitalized upon initial presentation to the clinic (Sawyer et al., 2016). Such hospitalizations are necessary to restore medical stability and are typically brief. In fact, the present study was part of the Study of Refeeding to Optimize iNpatient Gains (StRONG), a randomized clinical trial (RCT) demonstrating that higher calorie refeeding restored medical stability three days faster and shortened hospital stay by four days as compared to standard of care (Garber et al., 2021). However, it is not known whether a brief hospitalization for medical stabilization interferes with follow-up outpatient care, specifically in undermining parental belief in their ability to nourish their

child, i.e., parental self-efficacy in FBT. The impact of brief hospitalization on parental self-efficacy is particularly important to test because, as the cornerstone of FBT, it could be negatively impacted if parents may believe that it was their inability to maintain the child's safety in the outpatient setting that led to hospital admission. Diminished parental self-efficacy during the inpatient stay could be detrimental to longer-term clinical outcomes (e.g., eventual achievement of weight restoration). Improved understanding of the impact of brief hospitalization on parental self-efficacy and longitudinal outcomes will help to inform treatment planning (e.g., bolstering efficacy during or post-hospitalization to ensure the success of an evidence-based outpatient approach such as FBT).

As part of the psychological aims of the StRONG trial, the current analyses had three objectives. The first aim is to characterize parental self-efficacy (scores on the Parent Versus Anorexia scale; PVA) in the context of brief hospital admission by exploring correlations among baseline clinical variables of interest with both PVA scores at admission, and with change in PVA during the hospital stay. Given a lack of prior published evidence in regard to PVA and inpatient care settings, we had no *a priori* hypotheses for this aim. Second, we sought to examine change in PVA over hospital admission and up to 3-months post-discharge. Given that caregivers play a secondary role to the medical team who is responsible for inpatient management of the young person in contrast to their (the parents) primary role when their child is in the home setting, we hypothesized that PVA scores would decrease during admission but increase over time post-discharge. Finally, we aimed to evaluate longitudinal associations between PVA with %median BMI (Model 1) or ED symptoms (Model 2) post-discharge, and their potential interaction over time. We anticipated that greater increases in PVA scores (higher parental self-efficacy) would be associated with more reduction in global eating pathology and greater weight gain over time.

Methods

Participants and procedure—Methods for the StRONG clinic trial (ClinicalTrials.gov identifier NCT02488109) have been published, along with baseline characteristics of the study sample (Garber et al., 2019) and short-term (Garber et al., 2021) and long-term outcomes (Golden et al., 2021). Briefly, participants included adolescents and young adults ages 12–24 years who were diagnosed with AN or AAN. A total of 120 participants were enrolled upon admission to hospital between February 2016 to March 2019 and randomized to one of two refeeding treatments; $N = 111$ completed treatment. The proportion of those who are included in the analytic sample for the current study were 67/111 for whom we had baseline PVA data. Study data were collected longitudinally, daily in hospital and over one year follow-up. Patients with prior hospitalization for ED within 6 months were excluded. The two clinical study sites were inpatient medical ED units in northern California, United States. Both units are staffed with multidisciplinary care providers who have expertise in EDs and in supporting families with an FBT-informed care model. Specifically, caregivers are provided with psychoeducation about FBT (e.g., encouraged to take an agnostic view of the illness and reduce blame on themselves or the patient). Caregivers are continuously empowered to support their child on the unit to the extent that they are able to, and encouraged to prepare to uphold FBT principles following discharge. As appropriate, parents may supervise meals and snacks, are encouraged to coach their children on completing food

provided, and to provide feedback/commentary in a way that reinforces needed nutrition for recovery. During standardized nutrition education, the dietitian acknowledges the variability of each individual family's culture and accessibility regarding food and eating with the aim of helping them prepare to provide a significantly increased amount of nutrition following discharge within those parameters. The Institutional Review Boards at both sites approved the study. Minors (< 18 years old) provided assent with parental consent to participate, and young adults (age ≥ 18) provided consent. For the present study, parents provided consent for their own participation and data were examined from admission, discharge, and during follow-up at 10 days, 1-month, and 3-months post-discharge.

Measures

Parents Versus Anorexia Scale (PVA, Rhodes et al., 2005).—The PVA is a 7-item self-report assessment of parental self-efficacy in the context of caring for a child in FBT. Items are measured on a 5-point Likert scale anchored with 0 (*strongly disagree*) to 5 (*strongly agree*), with higher scores indicating greater self-efficacy. In the current study, PVA is reported for admission, discharge, and 10-days, 1-month and 3-months post-discharge. A single caregiver completed the measure across all time points, but the caregiving role (e.g., mother) was not specified in the current sample. The scale had acceptable internal reliability in its original validation (Cronbach's α = .78; (Rhodes et al., 2005)) and in the current study, Cronbach's α = .48 (admission), .73 (discharge), .54 (10-days), .57 (1-month), and .54 (3-months), respectively.

Eating Disorder Examination – Questionnaire (EDE-Q; Fairburn & Beglin, 1994).—The EDE-Q is a 28-item self-report questionnaire assessing ED attitudes and behaviors over the previous 28 days. Responses are on a 7-point Likert scale, anchored by 0 (*no days/not at all*) and 6 (*every day/markedly*); higher scores on the scale's global score reflect greater eating-related pathology. The EDE-Q has demonstrated strong psychometric properties across samples (Berg et al., 2012). In the current study, EDE-Q is reported for admission, 1-month and 3-months post-discharge. The measure demonstrated good internal reliability with Cronbach's α = .82.

Median BMI (mBMI).—Median BMI was defined as the 50th percentile BMI for age and sex using Centers for Disease Control data [CDC, 2001]. Percent mBMI was calculated by dividing measured BMI by mBMI and multiplying by 100. Highest self- or parent-reported historical weight and height and dates of those measures were obtained by proctored questionnaire to determine duration of weight loss.

Analytic Plan

The analytic sample reflects the number of parents from the larger trial population (N = 111) who completed the baseline PVA measure (n = 67). Prior to conducting analyses, we explored descriptive statistics and ensured that the data met assumptions of subsequent analyses. Specifically, independent samples t-tests and Pearson χ^2 -square tests were conducted to examine differences between the delineated analytic sample and participants with no PVA baseline data, as well as potential differences between diagnostic groups that would preclude combining across the sample of patients with AN or AAN.

Following these preliminary screening steps, Pearson correlations and a χ^2 -square test were used to evaluate associations among variables of interest with both baseline PVA scores, as well as with change in PVA (discharge scores minus admission scores) during hospitalization (Aim 1). A paired samples *t*-test and a repeated measures ANOVA were used to evaluate potential significant changes in PVA scores over admission through discharge and post-discharge follow-up (Aim 2); PVA assessment time points for this aim included admission, discharge, and 10 days, 1-month, and 3-months post-discharge.

Finally, two multi-level regression models were used to explore associations between PVA and EDE-Q scores and their potential interaction over time (Model 1) and associations between PVA and %mBMI and their potential interaction over time (Model 2). For PVA scores, EDE-Q scores, and %mBMI, we included values at admission, 1-month post discharge and 3-months post-discharge. For each of the two models, we entered PVA scores, time, and their interaction to predict either EDE-Q scores (Model 1) or %mBMI (Model 2) over time; PVA, EDE-Q scores, and %mBMI were nested within person for each of the three time points.

Patients were randomized to treatments carried out over varying lengths of inpatient treatment; thus, we included length of hospital stay (days) in our regression models, and time was coded to include the number of days in hospital, i.e., time admission = 0; 1-month post-discharge = days in hospital + 30; 3-month post-discharge = days in hospital + 90. Given that FBT is an outpatient treatment that includes a focus on increasing parental self-efficacy, and differences in PVA scores at admission were significantly different between families who reported pre-admission FBT vs. those with no prior FBT experience (p = .02), we also included the number of sessions of FBT reported retrospectively at 3-months post-discharge. All predictors were mean-centered before entering into the model and missing data were handled using full information maximum likelihood estimation. Level of significance was set at $p < .05$. SPSS v. 28 and the lme R package were used for analyses.

Results

Sample characteristics and preliminary analyses

As shown in Tables 1 and 2, this study sample of $N = 67$ was ethnically/racially diverse, $M(SD)$ 15.79 (2.20) years and 85.00 (11.86) %mBMI at admission, which constitutes acute moderate malnourished on average (Becker et al., 2014). There were significant differences in age between those with complete vs. missing PVA at admission, $F(107) = 1.89$, $t = 3.64$, $p < .001$, such that parents with complete PVA data were reporting on a younger child, $n = 67$, $M(SD) = 15.79$ (2.20) compared to those with missing PVA data, $n = 42$, $M(SD) = 17.49$ (2.62). There were no other significant differences between our analytic sample ($n = 67$) and those with missing PVA data according to number of days in treatment ($p = .93$), months since start of weight loss (i.e., duration of illness, $p = .07$), %mBMI at admission ($p = .92$), or baseline scores for eating pathology (EDE-Q, $p = .37$). Given these generally non-significant findings, we considered our delineated sample to be unbiased for further analyses.

Just over half of the sample were diagnosed with AN ($n = 38$, 57%). Comparing those diagnosed with AN vs. AAN, there were expected significant between-group differences

on %mBMI at admission, $F(65) = 12.81$, $t = -9.50$, $p < .001$, but no other significant differences according to age ($p = .13$), number of days in treatment ($p = .54$), months since start of weight loss ($p = .48$), or baseline scores for eating pathology (EDE-Q, $p = .09$) or parental self-efficacy (PVA, $p = .25$). Given these non-significant findings, all further analyses combined across diagnostic groups. For the full sample with at least one completed PVA ($n = 67$), patient age ranged from 12–20 years, $M(SD) = 15.79$ (2.20), a majority were female sex ($n = 65$, 92.5%), and identified their race as White (67.2%).

At baseline, 11 families (16.4%) reported having participated in outpatient FBT prior to admission; the number of outpatient FBT sessions ranged 0–8, $M(SD) = 0.4(1.3)$. At 3-months post-discharge, 26 (39%) families reported having participated in outpatient FBT since discharge; the number of outpatient FBT sessions ranged 0–14, $M(SD) = 3(5)$. PVA scores for families who reported any FBT prior to admission, $M(SD) = 22.00(4.49)$, were significantly higher than families who reported no FBT prior to admission, $M(SD) = 18.79(3.77)$, $F(65) = 2.74$, $t = -2.50$, $p = .02$. Other treatment modalities reported at 3-months post discharge included psychiatry ($n = 5$, 7%); residential care ($n = 7$; 10%) of whom $n = 2$ stepped down to a partial hospitalization program; and individual therapy ($n = 15$; 22%); of those reporting individual therapy, $n = 7$ (50%) also reported post-discharge FBT. Parents reported their own individual therapy, $n = 3$ (4%).

Aim 1. *Characterize PVA scores in the context of hospital admission.*—Baseline PVA scores were not significantly correlated with admission %mBMI ($p = .68$), months since start of weight loss, i.e., duration of illness ($p = .30$), age ($p = .12$), baseline EDE-Q scores ($p = .93$), or the number of attended FBT sessions reported pre-admission ($p = .36$). Change in PVA during hospitalization was not significantly correlated with length of inpatient stay ($p = .19$) or change in %mBMI during hospitalization ($p = .26$). A chi-square test used to explore differences in change in PVA during hospitalization relative to study arm (high-calorie vs. low-calorie refeeding) was also non-significant ($p = .21$).

Aim 2: *Evaluate change in PVA scores over hospital admission and up to 3-months post-discharge.*—PVA scores generally rose over time, until 3-months when the mean decreased slightly (Table 2). A paired samples *t*-test of mean difference between PVA at admission and discharge ($n = 36$) was not significant $t(35) = -1.36$, $p = .053$. For 20 participants with valid data at all five time points, results from a repeated measures ANOVA showed that PVA scores demonstrated significant change, $V = 0.55$, $F(4,16) = 4.96$, $p = .009$, $\eta^2 = .55$. Post-hoc tests based on estimated marginal group means showed that change in PVA was significant between admission and 1-month post-discharge ($p = .02$), admission and 3-month post-discharge ($p = .04$), and between hospital discharge and 1-month post-discharge ($p = .045$).

Aim 3. *Evaluate longitudinal associations between PVA scores and change in eating pathology (Model 1) and weight (Model 2) over time.*—Full results from both regression models are available in Table 3 and Table 4. Only time was a significant predictor of change in EDE-Q scores ($p < .001$) or %mBMI ($p < .001$). No significant main effects were evidenced for PVA or for the interaction of PVA and time in predicting change in eating pathology (Model 1; Table 3) or weight (Model 2; Table 4).

Discussion

This study set out to investigate the impact of hospitalization on parental self-efficacy and then to evaluate how parental self-efficacy may impact clinical ED outcomes over time, post-discharge. Our findings do not support concerns that hospitalization for adolescents and young adults with AN and AAN may undermine parental self-efficacy in the domain of weight restoration to support their recovery. We did not find evidence that parental self-efficacy in this domain decreased during hospitalization. Instead, parental self-efficacy rose over 3-months post-discharge, along with weight and cognitive markers of remission, suggesting a longer time course for these effects.

In terms of other factors that may impact parental self-efficacy, we did not find any negative impact of lower weight or greater ED severity on parental self-efficacy at hospital admission. Further, features of the hospitalization itself, for instance how long the young person was hospitalized or how much weight gained while inpatient, did not appear to negatively impact parental self-efficacy. This is somewhat surprising given that our findings suggest that the urgency that a parent might feel when their child is more severely ill when admitted, and thus comparatively more medically comprised, does not seem to impact their parental self-efficacy either at admission or during the inpatient stay. However, it is quite possible that the need for hospitalization (vs. avoided) was sufficient to minimize any variability in how empowered parents felt to manage the ED at the time of admission. It could also be the case that families who present to our inpatient unit are bolstered by the specialty of our care. Specifically, our medical hospital team is a highly specialized group of ED experts, with hospital-based interventions specifically designed to increase caregiver empowerment. As such, even parents of the most ill children might feel that they are provided care that will ensure the overall success of the treatment approach, both during the inpatient stay and in supporting parents for continued success as they discharge to an outpatient setting.

Post-discharge, the overall trend of self-efficacy scores in the outpatient setting increased but were not significantly higher until 1- month post-discharge. This time lag may reflect the fact that for many families, a transition to the home setting may be challenging and even lead to elevated rates of relapse soon after discharge (Berends et al., 2018). There were also no significant effects evidenced when we evaluated potential interactions between change in parental self-efficacy with either weight gain, or improvement in psychological ED symptoms. It is possible that in a better powered sample, we might see that increases in self-efficacy would positively impact weight gain in particular, given evidence that parental self-efficacy is a mediator of weight gain in FBT (Byrne et al., 2015; Sadeh-Sharvit et al., 2018). With this in mind, future work might examine whether directly targeting parental self-efficacy in the inpatient setting would be a catalyst for post-discharge weight gain, even when families might have a delay before connecting with outpatient FBT-informed care upon discharge. We note here that our weight outcome was %mBMI and this weight index may not be appropriate for those who present with history of higher premorbid weight, or AAN. Thus, although we combined across our sample of individuals with either AN or AAN based on a lack of significant between-group differences other than weight, it is quite possible that future work might benefit from studying the role of parental self-efficacy in

working toward weight restoration, even when the amount of weight needed to gain is above the expected to reach the median for age, gender, and height.

A major strength of the present study is that it was conducted alongside a randomized clinical trial. Therefore, certain measures that are often problematic in other study designs (e.g., self-reported weight), were collected by trained research staff according to protocol at scheduled research visits. Further, aside from receiving one of two refeeding treatments, all other procedures during hospitalization were protocolized to be the same across participants, providing the opportunity to examine parental self-efficacy under highly controlled conditions. Other strengths include our ability to examine outcomes for adolescents with either AN or AAN; although research supports elevated ED severity and medical acuity among those with AAN (Garber et al., 2019; Sawyer et al., 2016), less current research is published specifically characterizing treatment response within this high-priority clinical population. We also report findings across a continuum of care (inpatient to longitudinal follow-up in an outpatient setting) as transitions in levels of care are likely across a majority of patients with AN. Thus, although our sample is modest, it allows for examination of features of ED care (e.g., parental self-efficacy) relative to the treatment context in which they are evaluated, both informing treatment planning and suggesting lines of future inquiry.

In addition to our modest sample, some additional limitations of the study should be mentioned. Patients did not receive any protocolized treatment following discharge from hospital, and thus, treatment differed greatly across patients in the open follow-up period. Future work might investigate the impact of individual therapy (for the patient or parent), or engagement in parent support groups on both parental self-efficacy as well as longer-term outcomes. In an adequately-powered sample, future work might also investigate more directly whether increases in parental self-efficacy specifically in the context of FBT following longer inpatient stays are responsible for greater improvement in weight gain and/or cognitive ED symptoms. We also did not randomize participants to hospitalization (vs. no hospitalization); as such, we are unable to determine the precise impact of inpatient stay on parental self-efficacy. Further, the study design precludes assessment of pre-hospital levels of parental self-efficacy in a real-world setting; although we accounted for FBT participation in our regression models, future work might directly address how prior parental experience (prior to baseline admission) shapes the impact of a brief hospitalization on later self-efficacy and treatment outcomes. As mentioned previously, the relative expertise of our medical unit is both a study strength but also may limit generalizability to samples who are hospitalized for medical stabilization secondary to malnutrition in non-ED-specialty (community or general pediatric) hospital settings. Future work should investigate this possibility. We also note that Cronbach's alpha for PVA scores was relatively low at all points except discharge; however, this measure of reliability may be less relevant for scales that have more than one facet (Streiner, 2003). Further, this scale was conceptualized for use within the context of FBT, and therefore use in the inpatient setting may limit generalizability in its interpretation. With that said, the increasing trend in PVA scores over time in an outpatient setting reflects what we might expect clinically. However, this study did not support the predictive validity of the PVA for short-term clinical outcome.

Conclusions

In summary, when characterizing the impact of a brief hospitalization for adolescents with AN or AAN on parental self-efficacy in the domain of weight restoration, results support the utility of medical stabilization with relatively little apparent impact on caretaker empowerment. Given the importance of parental self-efficacy in the outpatient management of restrictive EDs (Byrne et al., 2015; Sadeh-Sharvit et al., 2018), these findings are encouraging in considering transitions between levels of care, and their potential impact on longer-term clinical outcomes

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Data Availability Statement:

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

Becker PJ, Nieman Carney L, Corkins MR, Monczka J, Smith E, Smith SE, Spear BA, & White JV (2014). Consensus Statement of the Academy of Nutrition and Dietetics/American Society for Parenteral and Enteral Nutrition: Indicators Recommended for the Identification and Documentation of Pediatric Malnutrition (Undernutrition). Journal of the Academy of Nutrition and Dietetics, 114(12), 1988–2000. 10.1016/j.jand.2014.08.026 [PubMed: 25458748]

Berends T, Boonstra N, & van Elburg A (2018). Relapse in anorexia nervosa: A systematic review and meta-analysis. Current Opinion in Psychiatry, 31(6), 445–455. 10.1097/YCO.0000000000000453 [PubMed: 30113325]

Byrne CE, Accurso EC, Arnow KD, Lock J, & Le Grange D (2015). An exploratory examination of patient and parental self-efficacy as predictors of weight gain in adolescents with anorexia nervosa: EXPLORATORY EXAMINATION. International Journal of Eating Disorders, 48(7), 883–888. 10.1002/eat.22376 [PubMed: 25808269]

Couturier J, Isserlin L, Norris M, Spettigue W, Brouwers M, Kimber M, McVey G, Webb C, Findlay S, Bhatnagar N, Snelgrove N, Ritsma A, Preskow W, Miller C, Coelho J, Boachie A, Steinegger C, Loewen R, Loewen T, … Pilon D (2020). Canadian practice guidelines for the treatment of children and adolescents with eating disorders. Journal of Eating Disorders, 8(1), 4. 10.1186/s40337-020-0277-8 [PubMed: 32021688]

Garber AK, Cheng J, Accurso EC, Adams SH, Buckelew SM, Kapphahn CJ, Kreiter A, Le Grange D, Machen VI, Moscicki A-B, Saffran K, Sy AF, Wilson L, & Golden NH (2019). Weight Loss and Illness Severity in Adolescents With Atypical Anorexia Nervosa. Pediatrics, 144(6), e20192339. 10.1542/peds.2019-2339 [PubMed: 31694978]

Garber AK, Cheng J, Accurso EC, Adams SH, Buckelew SM, Kapphahn CJ, Kreiter A, Le Grange D, Machen VI, Moscicki A-B, Sy A, Wilson L, & Golden NH (2021). Short-term Outcomes of the Study of Refeeding to Optimize Inpatient Gains for Patients With Anorexia Nervosa: A Multicenter Randomized Clinical Trial. JAMA Pediatrics, 175(1), 19. 10.1001/jamapediatrics.2020.3359 [PubMed: 33074282]

Golden NH, Cheng J, Kapphahn CJ, Buckelew SM, Machen VI, Kreiter A, Accurso EC, Adams SH, Le Grange D, Moscicki A-B, Sy AF, Wilson L, & Garber AK (2021). Higher-Calorie Refeeding in Anorexia Nervosa: 1-Year Outcomes From a Randomized Controlled Trial. Pediatrics, 147(4), e2020037135. 10.1542/peds.2020-037135 [PubMed: 33753542]

Hay P, Chinn D, Forbes D, Madden S, Newton R, Sugenor L, Touyz S, & Ward W (2014). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. Australian & New Zealand Journal of Psychiatry, 48(11), 977–1008. 10.1177/0004867414555814 [PubMed: 25351912]

Herpertz-Dahlmann B, Bonin E, & Dahmen B (2021). Can you find the right support for children, adolescents and young adults with anorexia nervosa: Access to age-appropriate care systems in various healthcare systems. European Eating Disorders Review, 29(3), 316–328. 10.1002/erv.2825 [PubMed: 33626222]

Hilbert A, Hoek HW, & Schmidt R (2017). Evidence-based clinical guidelines for eating disorders: International comparison. Current Opinion in Psychiatry, 30(6), 423–437. 10.1097/YCO.0000000000000360 [PubMed: 28777107]

Kaye WH, & Bulik CM (2021). Treatment of Patients With Anorexia Nervosa in the US—A Crisis in Care. JAMA Psychiatry, 78(6), 591. 10.1001/jamapsychiatry.2020.4796 [PubMed: 33625500]

Lock J, Agras WS, Bryson SW, Brandt H, Halmi KA, Kaye W, Wilfley D, Woodside B, Pajarito S, & Jo B (2016). Does family-based treatment reduce the need for hospitalization in adolescent anorexia nervosa?: Hospitalization in Adolescent Anorexia Nervosa. International Journal of Eating Disorders, 49(9), 891–894. 10.1002/eat.22536 [PubMed: 27062400]

Lock J, & Le Grange D (2015). Treatment manual for anorexia nervosa: A family-based approach.

Medical Management of Restrictive Eating Disorders in Adolescents and Young Adults. (2022). Journal of Adolescent Health, 71(5), 648–654. 10.1016/j.jadohealth.2022.08.006

Peebles R, & Sieke EH (2019). Medical Complications of Eating Disorders in Youth. Child and Adolescent Psychiatric Clinics of North America, 28(4), 593–615. 10.1016/j.chc.2019.05.009 [PubMed: 31443878]

Rhodes P, Baillie A, Brown J, & Madden S (2005). Parental efficacy in the family-based treatment of anorexia: Preliminary development of the Parents Versus Anorexia Scale (PVA). European Eating Disorders Review, 13(6), 399–405. 10.1002/erv.661

Sadeh-Sharvit S, Arnow KD, Osipov L, Lock JD, Jo B, Pajarito S, Brandt H, Dodge E, Halmi KA, Johnson C, Kaye W, Wilfley D, & Agras WS (2018). Are parental self-efficacy and family flexibility mediators of treatment for anorexia nervosa? The International Journal of Eating Disorders, 51(3), 275–280. 10.1002/eat.22826 [PubMed: 29314160]

Sawyer SM, Whitelaw M, Le Grange D, Yeo M, & Hughes EK (2016). Physical and Psychological Morbidity in Adolescents With Atypical Anorexia Nervosa. PEDIATRICS, 137(4), e20154080–e20154080. 10.1542/peds.2015-4080 [PubMed: 27025958]

Streiner DL (2003). Starting at the Beginning: An Introduction to Coefficient Alpha and Internal Consistency. Journal of Personality Assessment, 80(1), 99–103. 10.1207/S15327752JPA8001_18 [PubMed: 12584072]

Wallis A, Miskovic-Wheatley J, Madden S, Alford C, Rhodes P, & Touyz S (2018). Does continuing family-based treatment for adolescent anorexia nervosa improve outcomes in those not remitted after 20 sessions? Clinical Child Psychology and Psychiatry, 23(4), 592–600. 10.1177/1359104518775145 [PubMed: 29781302]

Walsh BT (2013). The Enigmatic Persistence of Anorexia Nervosa. American Journal of Psychiatry, 170(5), 477–484. 10.1176/appi.ajp.2012.12081074 [PubMed: 23429750]

Walsh BT, Xu T, Wang Y, Attia E, & Kaplan AS (2021). Time Course of Relapse Following Acute Treatment for Anorexia Nervosa. American Journal of Psychiatry, 178(9), 848–853. 10.1176/appi.ajp.2021.21010026 [PubMed: 34154394]

Public Significance:

Family-based treatment (FBT) is the recommended treatment for young people with anorexia nervosa (AN) and atypical AN, serious psychiatric illnesses that may require inpatient medical stabilization. Prior evidence suggests that parental self-efficacy in the outpatient setting is a key component of treatment success. The current study suggests that parental self-efficacy and longer-term treatment outcomes are not undermined by a brief inpatient hospitalization.

Table 1.

Descriptive statistics ($N = 67$)

Variable	range	*n* (%)	*M (SD)*
Diagnosis			
AN		38 (56.7%)	
AAN		29 (43.3%)	
Age	12 – 20		15.79 (2.20)
Sex			
Female		62 (92.5)	
Male		5 (7.5)	
Race/Ethnicity			
White		45 (67.2)	
Hispanic/Latino		11 (16.4)	
Asian		7 (10.4)	
Multiracial		4 (6.0)	
Months since start of weight loss	1.2 – 73.5		13.06 (13.46)
Length of Stay in days	4–24		10.7 (4.5)

Note: AN = anorexia nervosa; AAN = atypical anorexia nervosa

Table 2.

Values for parental self-efficacy, weight, and cognitive eating disorder symptoms over time

	Admit	Discharge	10 days	1 month	3 months	*Test statistic*
Parents Versus Anorexia						
n (full sample)	67	36	38	40	40	
range	8–28	10–33	12–31	13–33	13–30	
M(*SD*)	19.31 (4.05)	20.14 (4.71)	20.79 (3.94)	22.20 (4.16)	21.40 (3.91)	
n (paired samples t–test)	36	36				$t(35) = -1.36$, $p = .053$
	18.78 (4.34)	20.14 (4.71)				
n (rANOVA)	20	20	20	20	20	V = 0.55, $F(4,16) = 4.96$, $p = .009$, $\eta^2 = .55$
M(*SD*)	18.50 (4.47)	19.80 (4.31)	20.40 (3.76)	21.90 (4.20)	21.85 (3.65)	
EDE–Q						
n	63			46	49	
range	0.10–5.72			0.00–5.37	0.00–5.25	
M(*SD*)	3.29 (1.68)			2.56 (1.62)	2.23 (1.77)	
%mBMI						
n	67			63	61	
range	64.10–122.93			72.34–133.60	61.19–131.12	
M(*SD*)	85.00 (11.86)			93.12 (12.17)	95.44 (11.80)	

Note: AN = anorexia nervosa; AAN = atypical anorexia nervosa; EDE-Q = Eating Disorder Examination- Questionnaire; %mBMI = percent median BMI for age and gender norms

Table 3.

Estimates of fixed effects of longitudinal change in parental self-efficacy with eating pathology

Model 1: EDE–Q	***Est.***	***SE***	***df***	***t***	***p* value**
Intercept	3.20	0.208	82.66	15.40	< .001
time	− 0.01	0.002	70.52	− 5.95	< .001
PVA	− 0.04	0.034	93.14	− 1.19	.24
time * PVA	0.0005	0.0006	74.76	0.79	.43
FBT	0.05	0.042	63.50	1.30	.20
LOS	− 0.05	0.043	66.71	− 1.12	.27

Note: Model 1 outcome corresponds to change in Eating Disorders Examination-Questionnaire (EDE-Q) scores from admission to 1-month and 3-months post-discharge. LOS = length of stay (days) in the hospital; FBT = number of family-based treatment sessions post-discharge; PVA = Parents Versus Anorexia scale, measured at admission, 1-month, and 3-months post-discharge

Table 4.

Estimates of fixed effects of longitudinal change in parental self-efficacy with weight

Model 2: %mBMI	***Est.***	***SE***	***df***	***t***	***p* value**
Intercept	8.62	1.419	7.88	60.76	< .001
time	9.23	1.100	8.25	8.39	< .001
PVA	2.86	1.829	9.62	1.57	.12
time * PVA	2.78	3.057	8.61	0.91	.37
FBT	1.62	3.001	6.79	0.54	.59
LOS	2.51	3.059	6.57	0.82	.42

Note: Model 2 outcome corresponds to change in %median BMI from admission to 1-month and 3-months post-discharge. LOS = length of stay (days) in the hospital; FBT = number of family-based treatment sessions post-discharge; PVA = Parents Versus Anorexia scale, measured at admission, 1-month, and 3-months post-discharge