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Title:

Parental expressed emotion during two forms of family-based treatment for adolescent anorexia nervosa

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Abstract

High parental expressed emotion (EE), reflected by criticism or emotional over-involvement, has been related to poorer outcome in family-based treatment (FBT) for adolescent anorexia nervosa. This study assessed EE in 89 mothers and 64 fathers at baseline and end of treatment in a randomised trial comparing conjoint FBT to parent-focused FBT (PFT). Compared to conjoint FBT, PFT was associated with a decrease in maternal criticism, regardless of adolescent remission. Furthermore, an increase in maternal criticism was more likely to be observed in conjoint FBT (80%) than PFT (20%, *p=.001*). Adolescents of mothers who demonstrated an increase in EE, or remained high in EE, were less likely to remit compared to adolescents for whom EE decreased or remained low (33% and 0% vs. 43% and 50%, *p=.03*). There were no significant effects for paternal EE. The results highlight the importance of considering EE when implementing FBT for adolescents with AN.

Keywords:

Anorexia nervosa; adolescents; parents; family therapy; emotion; criticism

Parental expressed emotion during two forms of family-based treatment for adolescent anorexia nervosa

Family-based treatment (FBT; Lock & Le Grange, 2013) is currently the most efficacious outpatient treatment for medically stable adolescents with anorexia nervosa (AN) (Lock, 2015) and is considered first-line outpatient treatment (Ciao, Accurso, Fitzsimmons-Craft, Lock, & Le Grange, 2015; Couturier, Kimber, & Szatmari, 2013). Despite this, FBT is not effective for all patients, thus prompting exploration of factors that might enhance, or hinder, patient recovery. One such factor is expressed emotion (EE).

EE characterises the quality of interpersonal interactions and the relationship between a caregiver and an unwell relative (Brown & Rutter, 1966; Hodes, Dare, Dodge, & Eisler, 1999; Vaughn & Leff, 1976). Family members characterised as having high EE are generally critical or hostile toward the unwell family member and/or emotionally overinvolved (Rienecke, Accurso, Lock, & Le Grange, 2016). In assessing EE within families, the attitudes, emotions, and feelings expressed by family members towards an unwell relative are evaluated (Rein et al., 2006). The most common face-to-face methods used to assess EE are the Camberwell Family Interview (CFI; Vaughn & Leff, 1976), Standardized Clinical Family Interview (SCFI; Kinston & Loader, 1984), and the Five Minute Speech Sample (FMSS; Magana, Goldstein, Karno, & Miklowitz, 1986).

Early studies have suggested that parental EE predicts treatment response in family therapy for adolescents with AN. Specifically, high parental EE has been associated with treatment dropout (Szmukler, Eisler, Russell, & Dare, 1985), and poor treatment outcomes

(Le Grange, Eisler, Dare, & Russell, 1992; van Furth et al., 1996). For instance, in a small (n = 18) randomised clinical trial (RCT) of conjoint family therapy (CFT) versus separated family therapy (SFT), parents of adolescents who had a poor response to treatment made significantly more critical comments during the SCFI (i.e., high EE) at baseline compared to those who had a good or intermediate response to treatment (Le Grange et al., 1992). A subsequent, slightly larger, RCT (n = 40) showed that adolescents with high maternal EE at baseline (i.e., ≥ 3 critical comments on the SCFI) were significantly more likely to have a good or intermediate outcome at end of treatment (EOT) if they were randomised to SFT rather than CFT (Eisler et al., 2000). There were no differences in treatment outcomes across SFT and CFT for adolescents from low EE families. At 5-year follow up, adolescents from high EE families who received SFT continued to gain weight after treatment ended, reaching an average 99.9% median body mass index (mBMI), while those who received CFT reached an average 85.8% mBMI (Eisler, Simic, Russell, & Dare, 2007). Of note, adolescents from high EE families had significantly lower baseline weight in comparison to their low EE counterparts, suggesting that high EE may also be related to greater severity of illness.

More recently, the role of EE in FBT was examined among 121 adolescents with AN who participated in an RCT comparing FBT to adolescent-focused therapy (AFT). In this RCT, high baseline EE, assessed using the SCFI, did not moderate treatment outcome, nor was it a non-specific predictor of remission (Le Grange et al., 2012). However, high baseline maternal criticism was associated with greater likelihood of treatment dropout, and high baseline paternal criticism significantly predicted less improvement in eating disorder psychopathology at EOT (Rienecke et al., 2016). In addition, adolescents whose mothers

displayed greater baseline hostility (i.e. high EE) had greater increases in weight when they received AFT rather than FBT (Rienecke et al., 2016).

The present study is a secondary analysis of a recent RCT that built on earlier UK studies of separated forms of FBT (Le Grange et al., 2016). In this RCT, 107 adolescents were randomised to receive family therapy in either a conjoint format (FBT) or a separated parent-focused format (PFT; Hughes, Sawyer, Loeb, & Le Grange, 2015a). Paternal EE, measured using the FMSS, was a non-specific predictor of remission at 6-month follow-up, with lower paternal baseline EE associated with higher rates of remission. In contrast with previous findings (Eisler et al., 2000; Le Grange et al., 1992), EE was not a moderator of outcome; however, changes in EE during treatment were not examined in the main report (Le Grange et al., 2016).

Change in EE during treatment may be important to consider within the cognitive-interpersonal maintenance model of AN. In this model, various vulnerabilities and traits of carers are thought to contribute to an increased anxiety and stress reaction to AN behaviours, which in turn leads to high EE and behaviours that maintain the disorder (Treasure & Schmidt, 2013). Several strategies within FBT focus on tempering negative emotional expression within the family, particularly blame and criticism. Of importance, FBT requires parents to take a firm, authoritative stance toward their child's food intake and weight restoration; however, it is expected that this is achieved in a caring, non-critical manner. One process for achieving this involves externalising the illness from the adolescent. This process emphasises that it is AN, rather than the adolescent, that is driving the illness behaviour and needs to be challenged thereby reducing criticism that might otherwise be directed at the

adolescent. In addition, the clinician works throughout treatment to reduce parental self-blame and guilt for the AN by taking an agnostic view of illness causation and acknowledging that parents are not responsible for its development (Lock & Le Grange, 2013; Robin et al., 1999).

There is some preliminary evidence that change in EE may be an important aspect to examine beyond baseline, especially in relation to treatment structure. In the earlier RCT by Le Grange et al. (1992), parental criticism was found to increase from baseline to EOT in families who were randomised to receive CFT, while paternal and maternal criticism decreased in families who were randomised to receive SFT. Furthermore, a recent study of 47 adolescents with AN who received a derivative of FBT, acceptance-based separated family treatment, assessed EE at baseline and EOT using the parent-reported Family Questionnaire (Moskovich, Timko, Honeycutt, Zucker, & Merwin, 2017). This study found that decreases in maternal EE were associated with lower eating disorder psychopathology at EOT. The extent to which these results can be generalised is limited by the small sample size and use of self-report questionnaire; however they suggest that EE is more likely to diminish in separated rather than conjoint family therapy, and that change in EE may be related to adolescent outcomes.

The aims of the current study were to extend the previous findings from an RCT comparing conjoint FBT to PFT (Le Grange et al., 2016) by: 1) describing EE in parents of adolescents with AN and its relation to illness severity at presentation, and 2) examining change in parental EE over the course of treatment and how change was related to patient outcome and treatment type. Based on previous research, it was hypothesised that high

parental EE at baseline would be associated with greater patient illness severity, reductions in parental EE from baseline to EOT would be associated with higher remission rates, and that increases in parental EE from baseline to EOT would be associated with lower remission rates. In addition, we hypothesised that parental EE would be more likely to increase in conjoint FBT and decrease in PFT.

Method

Setting

This study utilised data collected as part of a RCT that was based within a specialist eating disorders program at a tertiary children's hospital in Australia (Le Grange et al., 2016). This multidisciplinary program provides outpatient and inpatient medical management, and outpatient FBT for medically stable adolescents with AN. The RCT compared conjoint FBT to PFT. A detailed study protocol has previously been published (Hughes et al., 2014).

Participants

One hundred and seven adolescents (12 to 18 years) and their parents agreed to participate in the RCT. Five families did not consent to audio recording of assessments, which reduced the sample size for the current study to 102 adolescents and their parents. Of these, 52 were randomised to FBT and 50 to PFT. Baseline characteristics of the sample are shown in Table 1. Mothers and fathers were predominantly Australian born (77% of mothers; 80% of fathers) and spoke English as their first language (97% of mothers; 100% of fathers). Thirty-five percent of mothers and 42% of fathers had a university degree.

Of the 102 families, 2 had no maternal involvement in treatment and 30 had no

paternal involvement in treatment. Of the 100 families with maternal involvement in treatment, 89 mothers provided a baseline FMSS recording, and 63 provided an EOT recording. Of the 72 families with paternal involvement in treatment, 64 fathers provided a baseline FMSS recording, and 31 provided an EOT recording. The only differences in baseline characteristics between those who did and did not complete the FMSS were country of birth and family structure. Mothers who did not complete the FMSS at baseline were more likely to have adolescents born outside Australia (24%) than those who did complete the FMSS at baseline (4%; $\chi^2(1, N = 106) = 7.41, p = .006$). Fathers who did not complete the FMSS at baseline were more likely to come from non-intact families (50%) compared to fathers who completed the baseline FMSS (28%; $\chi^2(1, N = 106) = 5.22, p = .022$). Similarly, fathers who did not complete the FMSS at EOT were more likely to come from non-intact families (48%) compared to fathers who completed the EOT FMSS (16%; $\chi^2 1, N = 106) = 10.35, p = .001$).

[Insert Table 1 here]

Measures

Weight and height were assessed at baseline and EOT. Weight to the nearest 0.05kg was recorded using calibrated digital scales while wearing a hospital gown and after voiding. Height was recorded to the nearest 0.1cm using a wall-mounted stadiometer. The %mBMI was calculated as [current BMI]/[50th centile BMI] x 100, using the 50th percentile BMI from the Centers for Disease Control charts relative to age and gender to the closest 6 months (Centres for Disease Control, 2000).

Eating disorder pathology was assessed using the Eating Disorder Examination

Version 16.0 (EDE; Cooper & Fairburn, 1987) at baseline and EOT. The EDE is a standardised semi-structured diagnostic interview that measures the severity of eating disorder psychopathology, primarily over the past 28 days. The EDE provides a global score of eating disorder psychopathology, and comprises subscales measuring dietary restraint, eating, weight, and shape concern. The EDE has been demonstrated to have good reliability and validity (Berg, Peterson, Frazier, & Crow, 2012).

Parental EE was assessed using the FMSS (Magana et al., 1986), administered to each parent at baseline and EOT without the other parent present. The FMSS was developed as a brief measure of EE in families of patients with a psychiatric illness. The parent is asked to speak about their child and their relationship for 5 minutes without additional prompts. The FMSS is audio-recorded for later coding. There are two subscales within the standardised coding system: Criticism and Emotional Over-involvement (EOI). Criticism is rated high if there is either, or both, a negative initial statement, a negative relationship, or one or more critical comments made. EOI is rated high if there is either, or both, an emotional display during the interview (e.g., crying), description of self-sacrificing/overprotective behaviour, and any two of the following: excessive detail about the past, one or more statements of attitude, and five or more positive remarks. A low rating for both Criticism and EOI results in an overall rating of low EE, while a high rating for either Criticism or EOI results in an overall rating of high EE. The FMSS has been found to be a reliable measure of EE, with ratings of Criticism and EOI found to be significantly related to corresponding ratings using the CFI (Rein et al., 2006).

Procedure

All adolescents referred to the program participated in a multidisciplinary intake assessment with their parents. The assessments comprised a diagnostic evaluation using standardised measures, as well as medical and psychiatric assessments as described in the study protocol (Hughes et al 2014). Following the assessment, a researcher discussed the treatment and RCT with eligible families and invited them to participate. A written consent form was signed, including an optional consent to allow audio-recording of future assessments. Of the 196 adolescents assessed, 141 were eligible to participate in the RCT, of whom 107 consented to randomisation. Participants were randomised to receive FBT or PFT and were notified of their treatment allocation prior to the beginning of treatment. Participants received an average of 15 treatment sessions over a period of 6 months.

FMSS recordings were transcribed verbatim and rated using a standardised coding system (Magana et al., 1986). The baseline FMSS recordings were rated by two of the authors (EA and EH); any discrepancies were discussed to reach a consensus rating. All FMSS recordings at the EOT were rated by one author (EA), with 10% rated by a second author (EH) to ensure reliability. Both raters were trained in the administration and coding of the FMSS by the developer of the FMSS, Ana Magana-Amato. Perfect agreement between raters on the overall groupings was obtained ($\kappa = 1.00$).

The study was approved by the Royal Children's Hospital and Monash University human research ethics committees.

Statistical Analytic Plan

Prior to hypothesis testing, data were checked for violations of the assumptions of independence, normality and homogeneity of variance. Duration of illness was positively skewed; however, removal of 3 outliers, as recommended by Pallant (2016), resulted in normal distribution. The hypothesis that high parental EE ratings at baseline would be associated with greater patient illness severity at baseline was evaluated using independent samples *t*-tests comparing low and high EE groups on %mBMI, duration of illness prior to treatment (in months), and EDE global score. To test the hypotheses related to change in EE, logistic regression analyses were conducted. EE group at EOT was entered as the dependent variable, EE group at baseline was entered as a covariate, and remission and treatment type were entered as predictors. Remission was defined as ≥95%mBMI plus EDE global score within 1 SD of community norms (Allison, 1995; Couturier & Lock, 2006a, 2006b). Significant models were further explored by dividing parents into four trajectory groups based on their change in EE rating from baseline to EOT. Parents with high EE at baseline and low EE at EOT were categorised as "High: Low" (i.e. decreasing EE). Parents with low EE at baseline and high EE at EOT were categorised as "Low: High" (i.e., increasing EE). Parents with low EE at baseline and EOT were categorised as "Low: Low" (i.e., stable low), and parents with high EE at baseline and EOT were categorised as "High: High" (i.e., stable high). Parallel categorisations were made for Criticism and EOI. EE groups were then compared using Fisher's Exact Tests due to small cell sizes in some analyses (Field, 2013).

Results

Parent EE and Illness Severity at Baseline

The percentage of parents in each EE group at baseline is shown in Table 2, together with group comparisons for each of the patient illness severity measures (%mBMI, duration of illness, EDE Global Score). At baseline, 44% of mothers and 26% of fathers were rated as high EE. For mothers, 24% were high on Criticism, and 27% were high on EOI. For fathers, 17% were high on Criticism, and 20% were high on EOI. There was a significant difference for illness duration, with adolescents of mothers with high Criticism having a longer duration of illness prior to treatment (M = 12.38, SD = 8.07) compared to adolescents of mothers with low Criticism (M = 8.37, SD = 5.40; t = -2.60, p <.05). No other significant differences were found.

[Insert Table 2]

Parental EE, Illness Remission, and Treatment Type

Logistic regressions were undertaken to evaluate the relationships between parental EE at EOT, remission status, and treatment type, after controlling for baseline parental EE. There were no significant findings for maternal EOI or EE, nor for paternal Criticism, EOI, or overall EE. However, as shown in Table 3, the analysis for maternal Criticism was significant. In the final model, treatment type was significantly associated with EOT maternal Criticism after controlling for baseline Criticism and EOT remission status (p = 0.12).

[Insert Table 3]

To explore maternal EE further, differences in remission and treatment type associated with change in maternal EE were examined using Fisher's Exact Test as shown in Table 4. There were significant differences in remission status associated with change in maternal EE (p = .026) and in treatment type by change in maternal criticism (p = .001). The

results showed that around half of the adolescents of mothers who remained low in EE (i.e., low at both baseline and EOT), or had a decrease in EE (i.e., high at baseline but low at EOT) had remitted at EOT (Low:Low = 50%; High:Low = 43%). By comparison, around a third of adolescents (33%) of mothers who had an increase in EE (i.e., low at baseline but high at EOT) had remitted at EOT. None of the adolescents of mothers who were high EE at both baseline and EOT had remitted at EOT. Regarding treatment type, the results indicated that in mothers who remained low in Criticism at baseline and EOT, similar proportions received FBT (44%) and PFT (56%). However, mothers who had a decrease in Criticism (i.e., high at baseline but low at EOT) were more likely to have received PFT (88%) than FBT (12%) and mothers who remained high in Criticism or had an increase in Criticism were more likely to have received FBT (High:High = 80%; Low:High = 100%) than PFT (High:High = 20%; Low:High =0%).

[Insert Table 4]

Discussion

This study makes an important contribution to the emerging literature on the significance of parental EE to the remission of adolescents with AN, how it relates to illness severity at presentation, and whether treatment structure differentially impacts on change in EE. Overall, the findings partially supported our hypotheses in that high baseline maternal Criticism was related to longer illness duration, and that change in maternal EE was related to treatment type and outcome.

As predicted, maternal criticism was more common for adolescents with a longer

duration of illness. While this finding suggests that parental EE might be associated with severity of illness, no association was found with weight. This is contrary to a previous study (Eisler et al., 2000) which found that adolescents from high EE families had significantly lower baseline weight than those from low EE families. Despite this, the findings of both studies suggest that high EE may reflect the challenges of caring for a child with a severe eating disorder. Although speculative, high criticism in mothers of adolescents with a longer duration of illness may be a result of persistent and progressive AN behaviours and the attributions parents make for these. Prior to presenting for treatment, AN behaviours may be more likely to be attributed to the child's own will, rather than externalised and attributed to the illness, as would be subsequently encouraged in FBT. Over time, these attributions might lead to parents feeling increasingly frustrated, and expressing blame and criticism towards the child. Of interest, within the FMSS coding system, a critical comment that is explicitly attributed to an illness or disorder (i.e., externalised) negates the comment as a criticism of the child and is not coded as such.

The relationship between high maternal criticism and longer duration of illness may also reflect the cumulative effects of caring for a child with a severe mental illness over a long period of time. It is recognised that poorer family functioning may be a result of a family reorganising itself around the illness and becoming less functional in the process (Eisler, 2005). The finding that high maternal criticism was related to greater duration of illness provides some support for the suggestion that the strained relationships observed in families of people of eating disorders may reflect reorganisation of beliefs and family functioning around the illness rather than being the cause of the illness. Of relevance, the

cognitive-interpersonal maintenance model suggests that high EE might not only develop in response to AN behaviours, but that it may contribute to maintenance of the illness (Treasure & Schmidt, 2013). This supports the need to implement strategies during treatment which could help to reduce EE.

As indicated in the earlier UK studies (Eisler et al., 2000; Le Grange et al., 1992), this study further suggests that a reduction in high EE may be more readily achieved in a separated form of family treatment rather than conjoint family treatment (i.e., FBT). Of note, participation in PFT in the current study was associated with lower maternal criticism at EOT regardless of patient remission and after controlling for baseline criticism. This suggests that the reduction in criticism observed in PFT is not simply a consequence of greater symptom remission within PFT. Furthermore, an increase in maternal criticism was more likely to be observed in FBT than PFT. Specifically, 27% of mothers in FBT who initially had low criticism moved into the high criticism group. In contrast, no mothers in PFT demonstrated this trajectory. These results are consistent with the previous research of Le Grange et al. (1992) in which a separated form of FBT was associated with reductions in maternal criticism and conjoint FBT was associated with increases in parental criticism. These findings warrant further investigation given that they suggest a potential adverse outcome of conjoint FBT. If so, it is possible that some families are more vulnerable to such outcomes, in which case it will be important to understand how we can identify these families and tailor treatment appropriately. PFT may be one option, but research may yet identify other treatment modalities in which EE can be addressed such as multi-family therapy, parent groups, and online resources (Binford Hopf, Rienecke Hoste, & Pariseau, 2015; Eisler et al., 2016).

We can only speculate as to why a decrease in maternal criticism was more likely to be observed in PFT than conjoint FBT. It is possible that the absence of the adolescent in PFT sessions may better provide parents with the opportunity to discuss and resolve their criticism towards their child than is typically the case in conjoint FBT (Hughes, Sawyer, Loeb, & Le Grange, 2015b). Openness to express criticism within treatment sessions may provide the therapist with opportunities to directly address these feelings, and help to reframe them and reinforce externalisation of the illness.

Although not evident in the logistic regression analyses (i.e., when treatment type was included), there was some evidence that change in maternal EE was associated with differences in adolescent remission status. Among adolescents of mothers who had an increase in EE, 33% had remitted. This compared to 57% of adolescents of mothers whose EE reduced during treatment, and 50% of adolescents for whom maternal EE remained low. Notably, no adolescents of mothers who remained high in EE were remitted at end of treatment. Few previous studies have examined change in EE in parents of adolescents with AN, particularly over the course of FBT (Le Grange et al., 1992; Moskovich et al., 2017). Instead, most studies have only demonstrated an effect of baseline EE on treatment engagement and outcomes (Eisler et al., 2000; Eisler et al., 2007; Rienecke et al., 2016; Szmukler et al., 1985; van Furth et al., 1996). The results of the current study extend these findings to suggest that persistence of high maternal EE is associated with poorer outcome.

The contribution of this study must be considered within the limitations of the research. Despite efforts to encourage participation from both parents at baseline and EOT assessments, a smaller number of fathers attended assessments or agreed to complete the

FMSS at both time points. This may have resulted in insufficient power and consequent non-significant paternal EE findings, rather than the influence of paternal EE being less important in the treatment outcomes of FBT. This notion is supported by the findings of the larger Le Grange et al. (2016) study, from which this sample was drawn, that found paternal EE was a non-specific predictor of remission at 6-month follow up. Specifically, higher rates of remission at 6-month follow-up were more evident when baseline paternal EE was low. Furthermore, in this study, fathers from non-intact families, who were nonetheless involved in treatment and caregiving, were less likely to complete the FMSS. Thus, results may not adequately reflect the influence of paternal EE in non-intact families. To increase response rates from all parents, future research might consider conducting the FMSS by phone when a parent is unable to attend face-to-face assessments.

It is also important to note that the data for this study were drawn from a single-site RCT and may not generalise to other settings. Of interest, while the remission rate for conjoint FBT in this trial was similar to that reported by another recent Australian-based RCT (Madden et al., 2014), it was lower than that reported in US-based trials (Lock et al., 2010) which may reflect differences in populations or healthcare systems. Finally, this study did not examine broader family factors such as parent psychopathology which Forsberg et al. (in press) have suggested may explain inconsistencies reported in associations between EE and outcomes of FBT. Although, Forsberg et al. found low levels of psychopathology in parents of adolescents with AN and did not examine its relation to EE, consideration of the interplay between EE, treatment outcomes, and a range of family factors may be an informative avenue for future research.

Overall this study suggests that EE is an important factor to consider when implementing FBT for adolescents with AN. Specifically, when baseline parental EE is high, the use of PFT may promote EE reduction and may, in turn, improve remission. Further research into the mechanisms by which reduction in EE can be facilitated in both separated and conjoint formats would help guide mental health clinicians in their efforts to reduce EE, regardless of the structure of FBT.

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Table 1 *Participant Baseline Characteristics According to Treatment Type*

	PFT	CFT	Total
Adolescents, n	50	52	102
Age, mean (SD)	15.6 (1.6)	15.4 (1.3)	15.5 (1.5)
Female, n (%)	43 (86%)	48 (92%)	91 (89%)
Australian born, n (%)	47 (94%)	49 (94%)	96 (94%)
English as first language, (%)	49 (98%)	51 (98%)	100 (98%)
Intact family, n (%)	32 (64%)	31 (60%)	63 (62%)
Duration of illness in months, mean (SD)	11.1 (9.6)	10.0 (8.2)	10.6 (8.9)
EDE global score, mean (SD)	2.1 (1.6)	2.21 (1.8)	2.2 (1.7)
%mBMI, mean (SD)	81.3 (5.9)	82.9 (6.2)	81.9 (6.1)
Mothers, n	43	46	89
Australian born, n (%)	33 (81%)	32 (73%)	65 (77%)
English as first language, n (%)	41 (98%)	42 (96%)	83 (97%)
University degree, n (%)	12 (29%)	18 (41%)	30 (35%)
Fathers, n	30	34	64
Australian born, n (%)	24 (86%)	24 (75%)	48 (80%)
English as first language, n (%)	28 (100%)	32 (100%)	60 (100%)
University degree, n (%)	10 (36%)	15 (47%)	25 (42%)

Table 2. *Comparison of Illness Severity by EE Group at Baseline*

		Baseline EE Group			
		Low	High	t-test	p-value
		M (SD)	M (SD)		
Maternal Criticism	n (%)	68 (76.4%)	21 (23.6%)		
	%mBMI	81.91(6.08)	82.30 (7.19)	-.25	.802
	Duration of illness (months)	8.37 (5.40)	12.38 (8.07)	-2.60	.011
	EDE Global Score	2.05 (1.69)	2.33 (1.85)	-0.66	.512
Maternal EOI	n (%)	65 (73%)	24 (27%)		
	%mBMI	82.34 (6.51)	81.15 (5.82)	0.77	.442
	Duration of illness (months)	9.30 (5.98)	9.48 (7.40)	-0.11	.910
	EDE Global Score	1.92 (1.71)	2.63 (1.68)	-1.76	.082
Maternal EE	n (%)	50 (56.2%)	39 (43.8%)		
	%mBMI	82.35 (6.25)	81.55 (6.47)	0.60	.554
	Duration of illness (months)	8.77 (5.52)	10.08 (7.26)	-0.95	.345
	EDE Global Score	1.82 (1.63)	2.49 (1.78)	-1.84	.069
Paternal Criticism	n (%)	53 (82.8%)	11 (17.2%)		
	%mBMI	82.17 (6.48)	81.50 (7.82)	0.30	.763
	Duration of illness (months)	8.90 (5.70)	10.00 (7.96)	-0.66	.604
	EDE Global Score	2.29 (1.63)	2.66 (2.12)	-.52	.513
Paternal EOI	n (%)	51 (79.7%)	13 (20.3%)		
	%mBMI	82.27 (7.12)	81.20 (4.62)	0.52	.609

		Baseline EE Group			
		Low	High	t-test	p-value
		M (SD)	M (SD)		
	Duration of illness (months)	9.31 (6.38)	8.23 (4.73)	-0.24	.815
	EDE Global Score	2.33 (1.73)	2.45 (1.70)	0.57	.573

Table 2 continued

		Baseline EE Group			
		Low	High	t-test	p-value
		M (SD)	M (SD)		
Paternal EE	n (%)	41 (64.0%)	23 (36.0%)		
	%mBMI	82.40 (6.94)	81.45 (6.26)	0.54	.591
	Duration of illness (months)	9.20 (5.96)	8.86 (6.35)	0.21	.836
	EDE Global Score	2.21 (1.61)	2.60 (1.89)	-0.86	.395

Table 3. *Logistic Regression Predicting End of Treatment Maternal Criticism from Treatment Type, Controlling for Baseline Maternal Criticism and Remission Status.*

	Step 1			Step 2			Step 3		
	β (SE)	p	Exp(B)	β (SE)	P	Exp(B)	β (SE)	p	Exp(B)
Variables			(95% CI)			(95% CI)			(95% CI)
Baseline Maternal Criticism	1.35	.055	3.84	1.16	.114	3.20	2.43	.039	11.28
	(0.07)		(0.97, 15.16)	(0.74)		(0.75, 13.53)	(1.17)		(1.14, 111.94)
Remission Status				-2.08	.056	0.13	-1.25	.277	0.29
				(1.09)		(0.15, 1.06)	(1.15)		(0.03, 2.74)
Treatment Type							-3.50	.012	0.03
							(1.39)		(0.02, 0.46)

Table 4. *Comparison of Remission Status and Treatment Type by Maternal Criticism Change from Baseline to EOT*

	Group	Remission Status, n (%)			Treatment Type, n (%)		
	(Baseline: EOT)	Not Remitted	Remitted	p	FBT	PFT	p
Maternal Criticism	Low: Low	23 (53.5%)	20 (46.5%)		19 (44.2%)	24 (55.8%)	
	High: High	5 (100.0%)	0 (0.0%)		4 (80.0%)	1 (20.0%)	
	Low: High	6 (85.7%)	1 (14.3%)		7 (100.0%)	0 (0.0%)	
	High: Low	5 (62.5%)	3 (37.5%)	.121	1 (12.5%)	7 (87.5%)	.001
Maternal EOI	Low: Low	22 (53.7%)	19 (46.3%)		20 (48.8%)	21 (51.2%)	
	High: High	1 (100.0%)	0 (0.0%)		0 (0.0%)	1 (100.0%)	
	Low: High	6 (75.0%)	2 (25.0%)		3 (37.5%)	5 (62.5%)	
	High: Low	10 (76.9%)	3 (23.1%)	.310	8 (61.5%)	5 (38.5%)	.576
Maternal EE	Low: Low	15 (50.0%)	15 (50.0%)		13 (43.3%)	17 (56.7%)	
	High: High	10 (100.0%)	0 (0.0%)		6 (60.0%)	4 (40.0%)	
	Low: High	6 (66.7%)	3 (33.3%)		6 (66.7%)	3 (33.3%)	

	Group	Remission Status, n (%)			Treatment Type, n (%)		
	(Baseline: EOT)	Not Remitted	Remitted	p	FBT	PFT	p
	High: Low	8 (57.1%)	6 (42.9%)	.026	6 (42.9%)	8 (57.1%)	.554

Note. Group comparison's tested using Fisher's Exact Test