

# Evaluating the Effectiveness of Family Based Treatment (FBT) for Children and Young People with Anorexia Nervosa.

Clare Randell

Commissioned by Dr Julie Franklin, Consultant Clinical Psychologist,  
Leeds Children and Young People's Eating Disorders Service,  
Leeds Community Care Trust

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## Introduction

### Background

The Leeds Children and Young People's Eating Disorder Service (CYP-EDS) is commissioned to work with children and young people (CYP) under 18 who have an eating disorder and a GP in Leeds (Franklin, Rigley, & Merrin, 2018). The service was formed in November 2016. Prior to this, CYP with eating disorders would have been seen by specialists within the Child and Adolescent Mental Health Services (CAMHS) in the East, West and South of the city.

Since forming, the service continues to receive more referrals each year. Not only are the number of referrals increasing but also the risk and complexity of CYP accessing the service. The team are actively working to maximise the efficiency of the service and improve the experience for CYP. New national guidelines recommend family treatment as the primary intervention for CYP with Anorexia Nervosa (AN) (NICE, 2017). In response, the service began training staff and offering Family Based Treatment (FBT).

AN is a serious condition which requires early identification and treatment. The diagnostic criteria are 'restriction of food intake leading to weight loss or a failure to gain weight resulting in a "significantly low body weight" of what would be expected for someone's age, sex and height. There must be a fear of becoming fat or gaining weight. (American Psychiatric Association, 2013, p338). It is common for individuals to have a distorted view of themselves and may not perceive there to be a problem.

Incidence and prevalence rates indicate a demand for care and therefore are used by commissioners to plan services. However, there is a tendency for the person with AN to conceal the illness and delay seeking professional help. This makes estimating the prevalence of AN difficult and offering timely treatment a challenge (Hoek & Van Hoeken, 2003). A recent review suggests: incidence rates of 4.7 per 100 000 population in the UK, a risk for females to males of 12:1 and the highest incidences found in adolescent females aged 10-19 (Currin, Schmidt, Treasure, & Jick, 2005). AN in

adolescence can severely impact on physical, emotional and social development (Le Grange, Eisler, Dare, & Russell, 1992). For some, AN can continue into adulthood, becoming chronic and resistant to treatment, so there is an emphasis on early detection and effective treatment (Royal College of Psychiatrists, 2012).

### **Literature review**

Randomised controlled trials have shown that family treatment is an effective approach for the treatment of AN. Russell, Szumkler, Dare, and Eisler (1987) conducted the first controlled trial comparing family therapy to individual supportive therapy. At one year follow up family therapy was shown to be more effective than individual supportive therapy. The study was limited in its generalisability as it was undertaken in a hospital setting recruiting both adults and adolescents with either a diagnosis of AN or Bulimia Nervosa.

Lock et al (2005) adapted family treatment and found it was effective at supporting CYP with AN. In the study 60% of CYP achieved significant change in weight for height and a 'normal' score on the Eating Disorder Examination. This study led to the development of FBT and the publication of the manual (Lock & Le Grange, 2015). Since Lock et al, controlled trials have shown FBT to be effective for adolescents with AN (Agras et al., 2014; Lock, Couturier, Bryson, & Agras, 2006; Lock, Le Grange, Moye, Bryson, W, & Jo, 2011; Madden et al., 2015).

Research is emerging that some families may struggle with family interventions, for example where there are high levels of self-criticism (Eisler et al., 2000; Le Grange, Eisler, Dare, & Hodes, 1992). If family treatment is contraindicated or not considered appropriate, the guidelines suggest CBT is delivered (NICE, 2017). Much of the evidence for CBT as an effective treatment for AN comes from adult populations (Fairburn, 2008). CBT addresses core psycho-pathology of eating and weight concerns (Fairburn, Shafran, & Cooper, 1999) which some argue is missing from the family therapy approach (Gowers, Clark, Roberts, Griffiths, & Edwards et.al. 2007). A recent Cochrane review found limited evidence for family approaches and high levels of bias as many studies are

completed by proponents of the model (Fisher, Skocic, Rutherford, & Hetrick, 2019). This emphasises the importance of further research of which this evaluation can form part.

### Specifics of FBT

The service that commissioned this SEP me uses FBT as described by Lock and Le Grange, (2015). The treatment is delivered in 20 sessions and divided into three phases (see Table1). In phase one the goal is achieving weight restoration. The second phase shifts the responsibility of eating back to the CYP. In the third phase, the emphasis is shifted towards creating a healthy identity for the CYP.

Table 1. Treatment structure of FBT (Lock & Le Grange, 2015)

| Phase | Description  | Sessions |
|-------|--|----------|
| 1     | Initial Evaluation and Setting up Treatment. Parents in full control of eating with aim to re-establish a normal eating pattern and restoring weight. Family Meal takes place. | 1-10     |
| 2     | Gradual return of control from parents to CYP. Emphasis is placed on supporting the adolescent to continue normal eating pattern on their own.                                 | 11-16    |
| 3     | Establishing healthy independence. Therapy focuses on establishing healthy family relationships, increasing autonomy in CYP and addressing issues of adolescence.              | 17-20    |

FBT takes an agnostic view of the eating disorder, meaning therapists do not try to analyse why the eating disorder developed. The principle of FBT assumes the family is the young person's best resource and all members are encouraged to participate fully. An essential part of the treatment is a family meal where the therapist observes interactions between family members and makes suggestions as to how to support the young person. Benefits of using the manual are described by the authors as: providing structure,

improving focus and increasing confidence for the young person and the therapist (Lock & Le Grange, 2015).

### Current Study

Services are accountable for the money they spend and in a resource stretched National Health Service this pressure can be intensified (Callaghan, 2001). A service evaluation is defined as a means of judging current care (National Research Ethics Service, 2013). Randomised controlled trials (RCTs) are held as the gold standard of research and form the basis of clinical guidelines which inform care pathways (McGovern, 2001). However, RCTs can have weak external validity and therefore case studies add a richness which would otherwise be missing from research (Elliott, 2002). Case studies can also offer an opportunity to reflect on more realistic clinical experience of implementing a therapy (Morley, 2017).

### **Aims**

FBT was introduced into the service in September 2017. The primary aim of this project was to understand if FBT was effective in treating AN in this service. Effectiveness is defined by the treating clinician and requires CYP to complete the intervention (all three phases), restore a healthy weight and regain healthy attitudes towards eating and body satisfaction. Many of the research trials have taken place in London by the proponents of the therapy so this research is a replication outside original trial settings. A second aim was to identify any differences between those who completed the intervention and those who had an unplanned discharge. Identifying factors which may be common amongst those who disengage, could inform how clinicians work with new families.

## **Methods**

### **Participants**

CYP who were assessed by the service as meeting the criteria for AN or whose symptoms were closest to this diagnosis were offered FBT. Data from those who had been offered FBT from September 2017 – December 2018 were collated into a database.

There were 35 families with children with an age range of 12-19 years (34 females, 1 male). There were 29 families who identified as White British, 3 Asian or Asian British Pakistani, 1 Asian or Asian British other, 1 family identified themselves as Mixed and 1 as Other.

I considered contacting families to understand their perceptions of the intervention. However, for ethical reasons this was not deemed appropriate as it could cause undue distress for families who had an unplanned discharge. This is an inherent difficulty with this type of research as people who disengage with therapy are invariably unavailable to provide feedback on the reasons for their decision.

### **Design**

A case series with a pre-post design was used to assess the first aim as to the effectiveness of the intervention for those who completed FBT. To address the second aim I compared characteristics of those who had an unplanned discharge and those who completed treatment.

### **Ethical Considerations**

The project was reviewed by the DClIn ethics committee and approved DClInREC 18-004 (see Appendix 1). It was also registered and approved with the local research and development department (see Appendix 2).

### **Measures**

Weight for height and Eating Disorder Examination Questionnaire (EDE-Q) were used to address the first aim. This corresponds to the measures used in previous studies (Lock et al., 2015). In addition, the Patient Health Questionnaire (PHQ-9) and the Generalised Anxiety Disorder (GAD-7) were used to look for differences. Each measure will now be discussed in turn.



### Weight for Height

Percentage weight for height is recommended to assess adolescents' malnutrition (see appendix 3 for calculation), as it is more sensitive to the normal changes occurring during puberty than weight alone or Body Mass Index (Royal College of Psychiatrists, 2012).

Current guidelines suggest weight for height should be between 95-100% and this is monitored each session but was recorded in the database at set times (see Table 2).

Weight restoration is defined as greater than 95% weight for height. This measure is used as a guide for professionals when supporting CYP to achieve a healthy body weight and can indicate levels of risk through treatment (Royal College of Psychiatrists, 2012). For example, rapid weight gain carries risk of cardiovascular difficulties and electrolyte instability, conversely slow weight gain can lead to growth problems.

### EDE-Q

The Eating Disorder Examination is a semi-structured interview designed to assess eating disordered thoughts and behaviours (Fairburn & Cooper, 1993). From this the EDE-Q was devised to be administered as a shorter self-report questionnaire and has shown to correlate highly with the interview (Fairburn & Beglin, 1994). The 28-item questionnaire asks respondents how many days eating disordered behaviour have been present, (over the past 28 days). A mean global score is calculated across the items and on four subscales; restraint, eating, weight and shape. A higher score is indicative of more severe eating disordered behaviour. The EDE-Q has shown good validity and reliability ( $\alpha = 0.95$ ) (Luce & Crowther, 1999). Norms for this measure have been published with a global clinical cut off score of 2.9 (Aardoom, Dingemans, Slof Op't Landt, & Van Furth, 2012; Mond, Hay, Rodgers, Owen, & Beumont, 2004). The questionnaire was used to establish attitudes towards eating, weight and shape.

### PHQ-9

A self-administered measure to assess for depression. There are nine questions based on the DSM-IV criteria for depression and respondents choose a score from 0 (not at all) to 3 (nearly every day). The measure has been shown to have good reliability and validity

(Kroenke, Spitzer, & Williams, 2001). A score of 10 or above is regarded as in the clinical range.

### GAD -7

A seven-item self-administered measure of anxiety based on the DSM-IV criteria. Respondents score items from 0 (not at all) to 3 (nearly every day) to reflect their levels of anxiety. The measure has been shown to have good reliability and validity (Spitzer, Kroenke, Williams, & Löwe, 2006). A score of 8 or above is deemed to be within the clinical range.

### **Procedure**

Families are referred to the service and then if appropriate booked into an assessment clinic. At assessment the CYP will be assessed for an eating disorder and if AN is indicated, will be offered FBT. At this point their data is entered into the database including weight for height taken by the referrer and demographic details. Table 2 illustrates when the measures were administered. When FBT commenced a note was made on the database whether an eating plan had been given to the family and how long AN had been present. Total number of sessions recorded was either; when the family was discharged, or at the point of data analysis for families in ongoing treatment.

Table 2. Measures and when they were administered.

| Measure           | Reason  | Time point given   |
|-------------------|---|--|
| Weight for height | Physical health assessment                                      | Referral, Assessment, Start of Intervention, Week 4, End of Intervention |
| EDE – Q           | Eating Disorder Assessing attitudes to weight, shape and eating | Assessment and End   |
| PHQ- 9            | Depression  | Assessment   |
| GAD - 7           | Anxiety   | Assessment   |

Families have regular sessions as part of the intervention. These start off frequently until phase 3 when time between appointments increases. Weight for height is measured at week 4 as individuals who have made good progress at this point, have better treatment outcomes (Doyle, Le Grange, Loeb, Doyle, & Crosby, 2010). At the end of the intervention the EDE-Q was repeated and a final weight for height measure taken. Neither the PHQ-9 nor the GAD -7 were repeated because the service moved to using the Revised Children's Anxiety and Depression Scale RCADS (CORC, 2017) in line with the wider CAMHS service. Data was also collected on length of difficulty prior to treatment (in months), total number of sessions attended and whether an eating plan was devised. In FBT, clinicians are advised not to use eating plans but rather give responsibility to parents for re-feeding.

Clinicians identified the outcomes for each family. Of the 35 families, 18 were in ongoing treatment; 6 had completed treatment; 5 had a planned discharge (1 to adult services); and 6 had an unplanned discharge. Individuals' with a planned discharge were those who it was agreed the treatment would be ended either because there was another intervention more suitable or needed to transition to adult services. An unplanned discharge was used for CYP who disengaged from treatment without consulting with the service. Ongoing treatment were those were continuing to receive interventions at the end of data collection.

### **Analysis**

A case series was conducted for those who completed FBT. Pre-post scores were available on the weight for height and EDE-Q measures. Clinically significant change was calculated for weight for height. Reliable change and clinically significant change were calculated for the EDE-Q. Reliable change was a concept introduced by Jacobson, Follette and Revenstorf (1984) and refers to whether the change has occurred above what might be expected by chance or due to measurement error. Clinically significant change refers to whether a person has moved from a clinical population to 'normal' population. There are three standards: A (most stringent, the post score is more than two standard deviations towards the 'normal' group), B (most lenient) and C (when the mean is closer

to the 'normal' population than the clinical population). Jacobson, Follette and Revenstorf (1984) recommend using criteria B or C where norms are available, if the normal population and clinical population scores overlap then criteria C is used, if not then criteria B is used. Criteria B was used in this evaluation.

Available data was compared between those who completed FBT and those who had an unplanned discharge and will be presented to address the second aim. The planned discharge group is less problematic as the CYP were still engaged in services and FBT does not suit all families. Those in ongoing treatment may disengage prior to completion of the intervention so conclusions can only be drawn from those who have completed the intervention or had an unplanned discharge (raw data is presented in appendix 4).

## **Results**

### Aim 1: IS FBT effective?

The first aim was to explore whether FBT was effective for CYP with AN. Six CYP completed treatment in the time period. The group was made up of 5 females, 1 male. The average age was 15.5 years (SD 1.05), 5 CYP were white British, 1 Asian British. Figure 1 shows the change in weight for height for each individual over the course of the intervention. All CYP were defined as underweight for their height at referral.

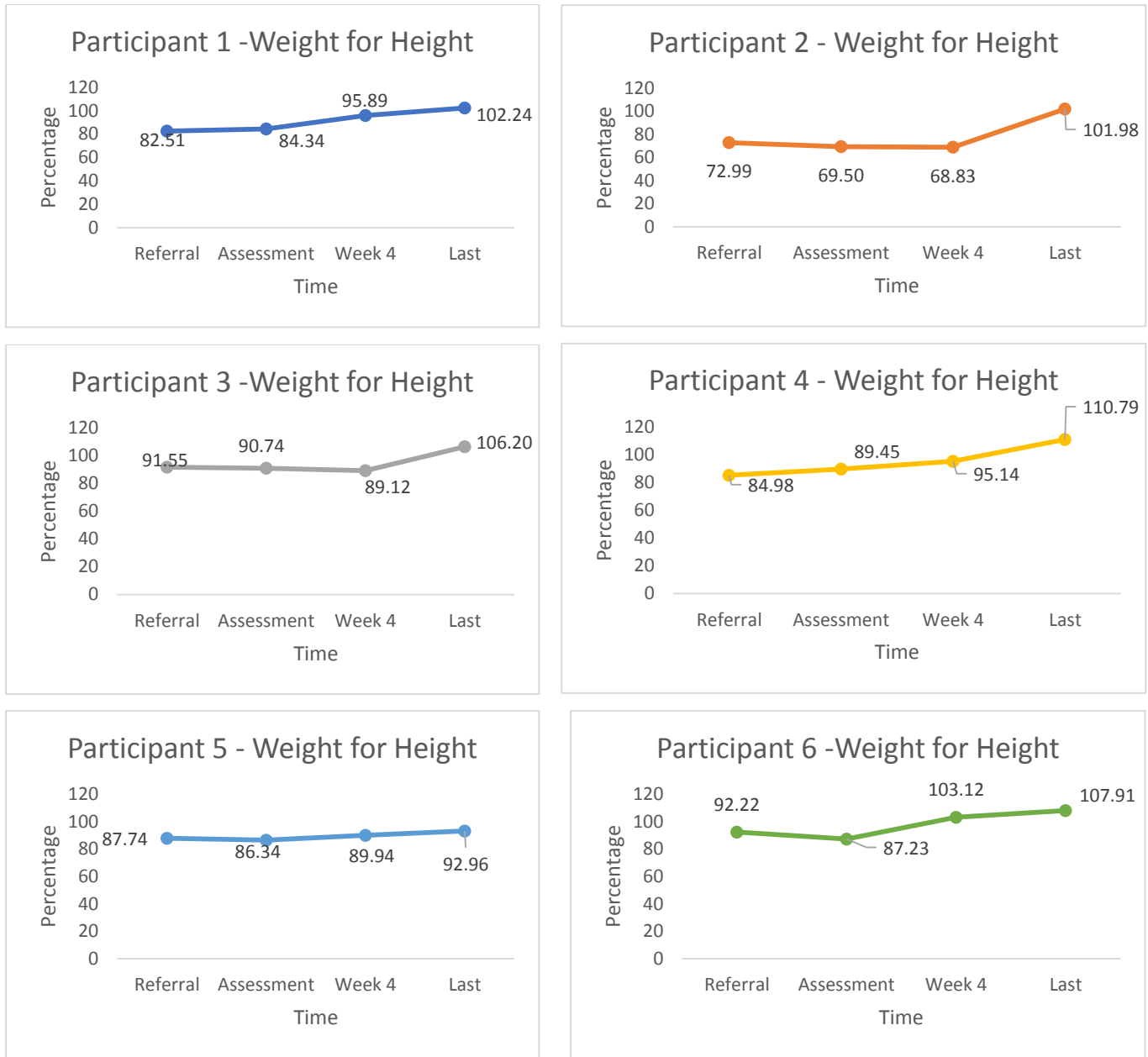


Figure 1. Weight for height scores for participants who completed FBT.

Participant 1’s lowest weight for height was at referral (82.51%) and then this steadily increased until discharge (102.24%). This was a similar pattern for participant 4; their lowest weight for height was at referral (84.98%) and this increased to discharge (110.79%). For participant 2, their weight for height at referral was 72.99%. Their weight continued to decrease and was lowest at week 4 (68.83%). Participant 3’s weight for

height decreased from referral (91.55%) to assessment (90.74%) and further to week 4 (89.12%) there was then an increase at discharge (106.20%). Participant 5 and 6 weight for height at referral was 87.74% and 92.22% and both decreased at assessment (86.34%, 87.23%). There was then a steady increase to discharge (92.96%, 107.91%). Clinically significant change occurred for 5 participants. According to the aims of the study participant 5 did not restore to a healthy weight (>95%), significant change did not occur. The treating clinician decided this case had completed FBT as they were able to maintain above 90% weight for height and have historically been in the lower percentile for their height. This demonstrates the completing treatment is more than a reduction on outcome measures.

EDE-Q scores were collected at assessment and on completing the intervention. They are presented in Figure 2. At assessment, scores appear fairly consistent across subscales for participants, for example participant 6 who scored highest on restraint score also scored the highest on eating, shape and weight subscales. Global scores range from 2.5 – 5.5. Restraint scores range from 2.0 – 5.0. Eating scores range from 2.2 – 4.8. Shape scores range from 2.6 – 6.0. Weight scores range from 1.6 – 5.8.

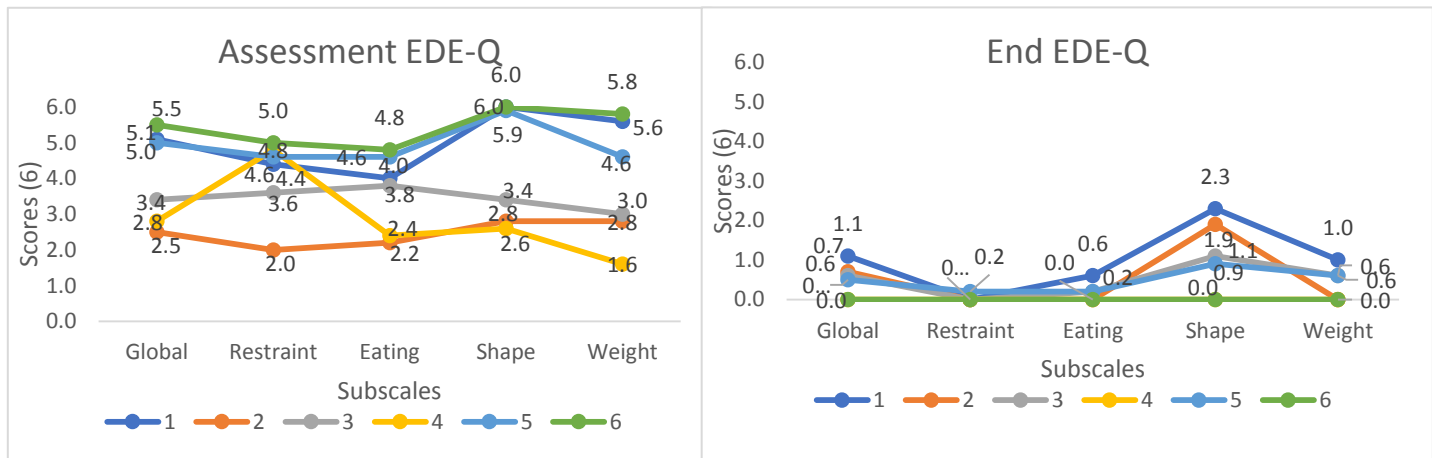


Figure 2. Assessment and end EDE -Q scores for CYP who completed FBT

On completing treatment EDE-Q scores decreased across all subscales for all participants. Global scores ranged from 0-1.1. Restraint subscales ranged from 0-0.2. Eating subscales ranged from 0-0.6. Eating subscales ranged from 0-2.3. Weight

subscales scores ranges from 0- 1.0). Shape subscale scores were the highest reported and ranged from 0- 2.3. The Leeds Calculator (Agostinis, 2018) was used to analyse whether change in EDE-Q scores was significant following the FBT intervention. Change was both statistically and clinically significant (using criteria c). Therefore, reliable and clinically significant change occurred following the intervention for all participants for global scores.

Table 3. EDE-Q global scores for participants who completed FBT

| Participant | Assessment EDE-Q | End EDE-Q | RCI             | CSC                    |
|-------------|------------------|-----------|-----------------|------------------------|
| 1           | 5.1              | 1.1       | Reliable change | Clinically significant |
| 2           | 2.5              | 0.7       | Reliable change | Clinically significant |
| 3           | 3.4              | 0.6       | Reliable change | Clinically significant |
| 4           | 2.8              | 0.0       | Reliable change | Clinically significant |
| 5           | 5.0              | 0.5       | Reliable change | Clinically significant |
| 6           | 5.5              | 0.0       | Reliable change | Clinically significant |

Aim 2: Identifying differences between those who completed the intervention and those who had an unplanned discharge

To address the second aim, assessment data was compared for those who completed FBT with those who had an unplanned discharge. The data is presented below to give an indication of patterns that emerged but due to small sample size they are intended only to give an indication. Six CYP had an unplanned discharge. The average age for this group was higher 16.6years (SD. 1.69) than those who completed the intervention. There was more ethnic diversity in the group who had an unplanned discharge (3 White British, 1 Other, 1 Mixed, 1 British Asian). Figure 3 shows the weight for height for those who completed the intervention and those who had an unplanned discharge.

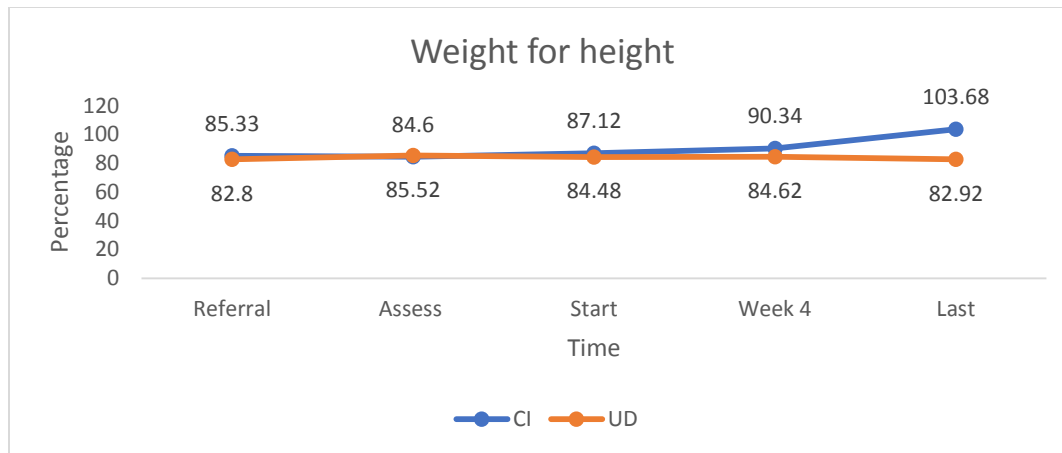


Figure 3. Weight for height for cases who completed the intervention (CI) and those who had an unplanned discharge (UD).

For those who completed the intervention their weight for height at referral was 85.33% (SD. 7.1) and decreased when they were assessed by the service 84.6% (SD 7.7). It increased slightly on starting treatment 87.12% (SD 9.23). At week 4 weight for height was 90.34% (SD 11.67). On completing FBT the mean weight for height was 103.68% (SD 6.24). In the unplanned discharge group, the mean referral weight for height was 82.8% (SD. 7.76). This was lower than the average for the group who completed the intervention. Unlike those who completed the intervention there was some initial weight gain for those who had an unplanned discharge, as there was an increase in mean weight for height at assessment 85.52% (SD. 9.13). At the start of treatment weight for height had decreased again 84.48% (SD. 10.1). Week 4 the weight for height had slightly increased 84.62% (SD. 9.76) but had decreased again at the last available measurement 82.92% (SD. 9.77). This is significantly below the non-clinical range (95%) and similar to weight at referral.

EDE-Q scores were higher across most domains for the CYP who completed FBT compared to those who had an unplanned discharge, see Figure 4. In the group that completed the intervention the global score was 4 (SD 1.30), restraint score 4 (SD 1.21), eating concern score 4 (SD 1.10), shape concern 4 (SD 1.68) and weight concern score 4 (SD. 1.69). In the group who had an unplanned discharge the scores were lower except



the shape concern. Global score was 3.4 (SD.1.59), restraint score 2.56 (SD 2.28), eating concern score of 2.56 (SD 1.73), shape concern score of 4.06 (SD 1.38) and weight concern score 3.92 (SD 1.43).

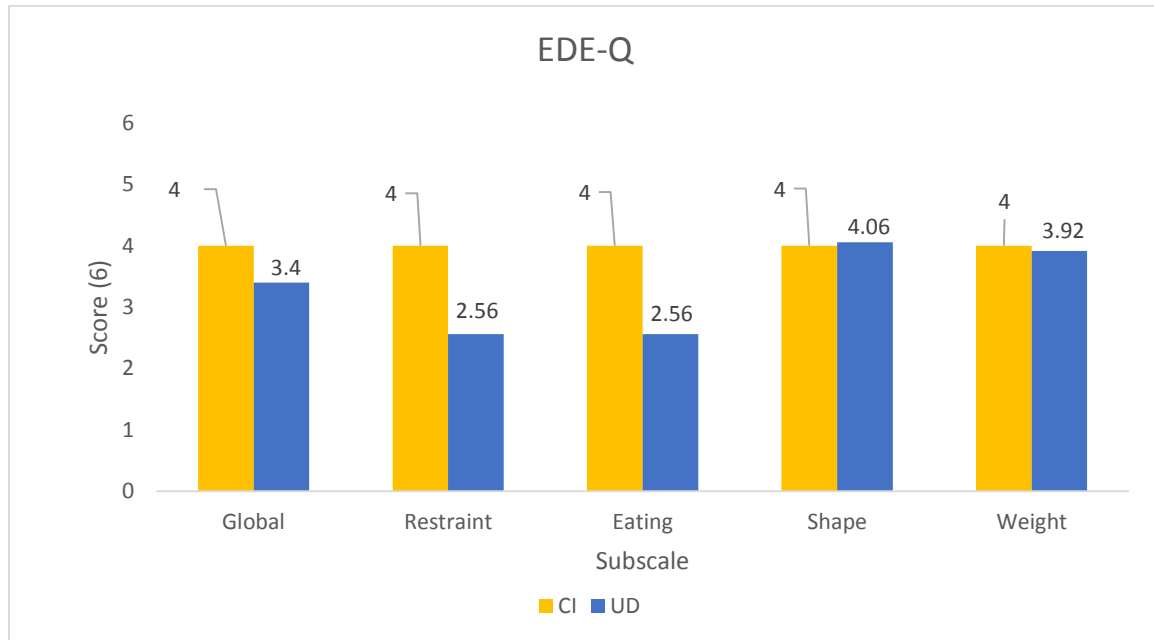


Figure 4. Scores on the EDE-Q for those who completed the intervention (CI) compared to those who had an unplanned discharge (UD).

On the anxiety measure; those who had an unplanned discharge reported the highest levels of anxiety at assessment and were in the clinical range (12.33, SD 1.53) compared to those who completed treatment who were in the non-clinical range (7, SD 6.55). The CYP who had an unplanned discharge reported higher levels of depression (15.33 SD 3.21) compared to those who completed FBT (10, SD 8.04). Both depressions scores were in the clinical range. A full data set is available in Appendix 4. The mean length of difficulty was longer in the group who completed FBT (11 months, SD 8.39), compared to the unplanned discharge (6.25 months, SD 4.03). Providing eating plans was standard practice prior to the introduction of FBT, so some families were found to have eating plans despite being discouraged in FBT. In the unplanned discharge group, more had an eating plan (50%) compared to those who completed FBT (33.33%).

## Discussion

FBT is a relatively new treatment but this study indicates it may be effective for CYP with AN. Case series are a helpful way of understanding the change process and can be used as a framework for comparing those who do well and those who disengage from the service. The aims of the study were met. Firstly, the findings suggest FBT is effective at weight restoration and decreasing unhealthy attitudes towards restraint, eating, weight and shape in CYP. Amongst the treatment completers all were below 95% weight for height at referral, reported restricting their eating and would therefore have a diagnosis of AN. All except one restored to a healthy weight for height according to the guidelines (Royal College of Psychiatrists, 2012). This may indicate the measure might not be appropriate and supporting individuals with AN is a complex process. Among those who completed the intervention all had statistical and clinically significant change on the EDE-Q. This implies the change in attitudes for the CYP was reliable. The higher scores on the shape subscale could be understood as a normal developmental feature of this age group particularly with the ever-increasing influence of social media.

With regards to the second aim tentative suggestions can be made but nothing more as the sample size was too small. The unplanned discharge group were more underweight at assessment (lower weight for height score) had lower concerns about eating and weight (lower scores on EDE-Q) shorter mean length of difficulty, higher levels of anxiety and depression. This could indicate those in the unplanned discharge group had less motivation for change. Higher number of eating plans could suggest anxiety from the clinicians of adopting FBT fully as a new way of working. Families may have sensed clinicians' apprehension which affected motivation. Therefore, a benefit of this evaluation might be increasing clinician's confidence FBT is beneficial.

Analysis was not completed for families still receiving FBT as research shows recovery from an eating disorder is not a linear process, so there could be some further deterioration in those in ongoing treatment and some may not complete (Fairburn, 2008). Further research with more participants would increase understanding as to whether these

emerging patterns are indicative of factors in those who are discharged prematurely. This allows the service to anticipate individuals for whom FBT may not be suitable or who may benefit from additional support (for example CBT to treat depression alongside FBT).

A strength of this study was the completion of a parallel evaluation looking at the process of implementing FBT from the clinicians' perspective by Siena (2019). The semi-structured interviews were analysed around clinicians' experience of delivering FBT, factors around unplanned discharges and what clinicians thought might help CYP stay in treatment. The themes emerging help to provide some scaffolding for how the service might try to support families in the future to maintain engagement.

### **Wider literature**

The case studies illustrate FBT may be effective which is concurrent with the research (Agras et al., 2014; Lock, Couturier, Bryson, & Agras, 2006; Lock et al., 2005; Lock, Le Grange, Moye, Bryson, W, & Jo, 2011; Madden et al., 2015). The average number of sessions for those who completed the intervention was 20. This is the recommended number in the manual which shows the service are adhering to the protocol (Lock & Le Grange, 2015). Similarly the unplanned discharge percentage was within the range observed in other studies of 10-20% (Lock, Couturier, Bryson, & Agras, 2006).

There has been a criticism that research in this area has focused on efficacy of treatment rather than predictors of success (Doyle et al., 2010). The current study focused on effectiveness as it is argued this needs to be established in clinical practice prior to moving on to the next stage of identifying factors which suggest some CYP may do better with this model of treatment. Further research is needed to increase understanding of effective treatment for CYP with disordered eating before thoughts and behaviours become too entrenched making change more difficult (Royal College of Psychiatrists, 2012).

### **Implications**

The practical implications of the reported findings are that CYP who complete the intervention achieve weight restoration and have healthy attitudes to eating, weight, shape. The service is supporting CYP to regain weight without hospital admission. This has shown to be beneficial for CYP, as they are not taken away from their support networks (Gowers, Clark, Roberts, Griffiths, Edwards, Bryan, Smethurst, Byford, & Barrett, 2007). Effective treatment for CYP with eating disorders is paramount as outcomes in adult populations are much worse (Lock et al., 2006). It is important clinicians continue to collect data so that effectiveness can continue to be evaluated. The learning from this study can increase clinicians' confidence that the intervention is effective and may decrease the use of eating plans. The results along with the findings from Siena (2019) may be beneficial to new families referred to the service who may be apprehensive about the treatment.

### **Recommendations to the service and dissemination**

It has been recommended to the service to repeat the evaluation when more families have completed FBT. The largest group were still engaged in the intervention. If the analysis were to be repeated in a year, the service could use it to evaluate the impact of the intervention, explore difference in those who do well and those who disengage and identify mechanisms for change as detailed by Elliott, (2002).

Since the evaluation was completed the service has introduced a four-week review. It is recommended the clinicians use this to discuss progress with the family and identify any barriers that have arisen. This serves to maintain engagement and begin a dialogue as to how to move forward which may reduce families disengaging without warning leaving them without support.

The findings were presented in a team meeting to all staff who work in the service. This was a helpful opportunity to feedback to the team the impact of their work. A verbal presentation and poster were delivered to DCLinpsychol. students, course staff and staff from local services.

**Limitations**

Despite best efforts there were limitations to the study. A baseline was not available for the families therefore spontaneous recovery cannot be discounted. There was the additional difficulty of depression and anxiety measures not being repeated at the end of FBT. These issues highlight the challenges of completing research in busy clinical services, but it shows the service is forward thinking that they are attempting to evidence their work.

Despite best efforts there could be validity issues in the data. The first weight is recorded by the referrer. They will use different scales and may have different protocols (for example removing shoes). However, from assessment onwards the same scales are used reducing error. There may be some error in using the EDE-Q as it is a self-report measure. Deception is a feature of AN making it difficult to accurately understand the experience of the young person for the therapist and the family (Fairburn, 2008). To some extent this should be negated by the use of a reliable change measure. The norms were taken from adult populations as these were deemed the most appropriate. One study has reported the norms for adolescents but they adapted the EDE-Q so they would not generalise to this evaluation (Carter, Stewart, & Fairburn, 2001).

A further limitation is the use of FBT as an approach to address disordered eating. The therapeutic mechanisms are described in the manual as ‘unproven’ (Lock & Le Grange, 2015, p15). Whilst the premises seem logical and there is empirical evidence to suggest FBT is effective for families, caution needs to be taken when offering the therapy to families and it relies heavily on skilled clinicians to administer and maintain the engagement of families. The service could continue to build on the case series with families who complete FBT and those who disengage. This would increase our understanding of the intervention itself as well as the potential mechanisms to bring about change for CYP with AN. This may be enhanced by interviewing families, who complete treatment to understand their experiences and inform future practice.

**Conclusions**

FBT could be effective for CYP with AN. In a case series following FBT, five of the six CYP achieved weight restoration and all six reported healthy attitudes to weight, shape and eating. With more data it would be possible to confirm these findings. This study shows promise that FBT can be implemented in a clinical setting and have positive outcomes for families although the specific factors that caused the change were beyond the scope of this study. More studies need to be conducted in clinical settings with CYP who experience AN if there is to be effective treatment for individuals and their families.

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## Appendices

### *Appendix 1: DClin ethics approval*



**Clare Randall**

Debby Williams

Wednesday, 23 January 2019 at 11:25

[Show Details](#)

Hi Clare

The reviewers have considered your changes and are happy for you to go ahead. They are happy to leave analysis decisions to you and your academic tutor (they weren't sure what you meant by case study series in this context). Please ensure that any recommendations that are passed on to the service are supported robustly by your findings, and take into account any limitations of your project.

DClinREC 18-004 - Maximising the Utility of Family Based Treatment – Identifying Factors that Impact on Drop-out.

Thanks

Debby

Debby Williams  
Student Education Service Officer (Programme Co-ordinator)  
Clinical Psychology Training Programme  
Leeds Institute of Health Sciences  
Level 10 Worsley Building  
Clarendon Way  
University of Leeds  
LS2 9NL

## *Appendix 2: Local Research and Development Approval*

**From:** MCCLURE, Jenny (LEEDS COMMUNITY HEALTHCARE NHS TRUST)

**Sent:** 09 January 2019 10:56

**To:** FRANKLIN, Julie (LEEDS COMMUNITY HEALTHCARE NHS TRUST)

**Cc:** PHILLIPS, Stacey (LEEDS COMMUNITY HEALTHCARE NHS TRUST)

**Subject:** RE: Small scale service evaluation project approval and registration

Hi Julie

On behalf of Stacey Phillips R&D Development Manager (Specialist and Children's Services)  
Clinical Outcome Measure Project Manager

Maximising the utility of family-based treatment – identifying the factors that impact upon the outcome – SE/0106

We are pleased to approve the above service evaluation on the provision the service manager emails confirmation of permission to the R&D department.

Good luck and all the best, please can you let the R&D department know the outcome when you have finished.

Kind Regards

Jenny McClure  
Research Administrator & Local Lead for EDGE  
2<sup>nd</sup> Floor, Stockdale House  
Headingley Business Park  
Victoria Road  
Leeds  
LS6 1PF

***Appendix 3: Weight for height calculation***

Single method of calculation weight for height (Royal College of Psychiatrists, 2012, p20).

$$\text{Percentage BMI (or percentage WFH)} = \frac{\text{Actual BMI} \times 100}{\text{Median BMI (50th percentile) for age and gender}}$$

Appendix 4: Raw Data

Table 4. Data for all participants

| Group | Participant | Gender | Age (years)        | Ethnicity                          | Weight for Height (%) |            |        |        | EDE-Q Start |           |        |       |        | EDE-Q Last |           |        |       |        | PHQ 9 |      | GAD 7 |      | Length difficulty (months) | No. sessions attended | Eating Plan |     |
|-------|-------------|--------|--------------------|------------------------------------|-----------------------|------------|--------|--------|-------------|-----------|--------|-------|--------|------------|-----------|--------|-------|--------|-------|------|-------|------|----------------------------|-----------------------|-------------|-----|
|       |             |        |                    |                                    | Referral              | Assessment | Week 4 | Last   | Global      | Restraint | Eating | Shape | Weight | Global     | Restraint | Eating | Shape | Weight | Start | Last | Start | Last |                            |                       |             |     |
| TC    | 1           | F      | 15                 | White - British                    | 82.51                 | 84.34      | 95.89  | 102.24 | 5.1         | 4.4       | 4.0    | 6.0   | 5.6    | 1.1        | 0.0       | 0.6    | 2.3   | 1.0    | 20.0  | N/A  | 15.0  | N/A  | 5                          | 15                    | Nc          |     |
|       | 2           | F      | 14                 | White - British                    | 72.99                 | 69.50      | 68.83  | 101.98 | 2.5         | 2.0       | 2.2    | 2.8   | 2.8    | 0.7        | 0.0       | 0.0    | 1.9   | 0.0    | 3.0   | N/A  | 2.0   | N/A  | 6                          | 19                    | Yes         |     |
|       | 3           | F      | 17                 | White - British                    | 91.55                 | 90.74      | 89.12  | 106.20 | 3.4         | 3.6       | 3.8    | 3.4   | 3.0    | 0.6        | 0.0       | 0.2    | 1.1   | 0.6    | 13.0  | N/A  | 9.0   | N/A  | 19                         | 22                    | Yes         |     |
|       | 4           | F      | 15                 | Asian or Asian British - Pakistani | 84.98                 | 89.45      | 95.14  | 110.79 | 2.8         | 4.8       | 2.4    | 2.6   | 1.6    | 0.0        | 0.0       | 0.0    | 0.0   | 0.0    | 4.0   |      | 1.0   | N/A  | 8                          | 13                    | Nc          |     |
|       | 5           | F      | 16                 | White - British                    | 87.74                 | 86.34      | 89.94  | 92.96  | 5.0         | 4.6       | 4.6    | 5.9   | 4.6    | 0.5        | 0.2       | 0.2    | 0.9   | 0.6    | 10    | 10   | 2     | 3    | 24                         | 34                    | Nc          |     |
|       | 6           | M      | 16                 | White - British                    | 92.22                 | 87.23      | 103.12 | 107.91 | 5.5         | 5.0       | 4.8    | 6.0   | 5.8    | 0.0        | 0.0       | 0.0    | 0.0   | 0.0    | 19    | 0    | 15    | 0    | 4                          | 16                    | N/A         |     |
| PD    | 7           | F      | 18                 | White - British                    | 74.01                 | 81.19      | 86.59  | 101.83 | 5           | 5         | 4.2    | 5.5   | 4.8    | 1.7        | 1         | 1.6    | 2.6   | 1      | 20.0  | N/A  | 12.0  | N/A  | 12.0                       | 11                    | Yes         |     |
|       | 8           | F      | 16                 | White - British                    | 87.48                 | 88.35      | 91.2   | 87.16  | 4.3         | 3.4       | 4.4    | 4.6   | 4.4    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 1                     | Yes         |     |
|       | 9           | F      | 17                 | White - British                    | 118.57                | 127.48     | 96.5   | 88.16  | N/A         | N/A       | N/A    | N/A   | N/A    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 24.0                       | 1                     | NC          |     |
|       | 10          | F      | 17                 | White - British                    | 144.6                 | 117.23     | 115.45 | 115.45 | N/A         | N/A       | N/A    | N/A   | N/A    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 3.0                        | 4                     | Nc          |     |
|       | 11          | F      | 19                 | Asian background                   | 65.29                 | 67.34      | 70.97  | 74.09  | 0.5         | 0         | 0.2    | 0.6   | 1.2    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 13                    | Nc          |     |
|       | 12          | F      | 17                 | White - British                    | 78.19                 | 79.86      | 80.62  | 87.29  | 1.90        | 4.40      | 3      | 0.8   | 0      | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 3                          | 48                    | Yes         |     |
| OT    | 13          | F      | 15                 | White - British                    | 88.95                 | 92.11      | 95.66  | 99.06  | 2.00        | 1.00      | 0.2    | 2.9   | 3.6    | N/A        | N/A       | N/A    | N/A   | N/A    | 9     | 15   | 8     | 11   | 12                         | 26                    | Nc          |     |
|       | 14          | F      | 16                 | British - Pakistani                | 82.21                 | 73.91      | 79.63  | 88.41  | 2.30        | 2.60      | 1.2    | 3.4   | 1.6    | N/A        | N/A       | N/A    | N/A   | N/A    | 9     | N/A  | 8     | N/A  | 6                          | 29                    | Yes         |     |
|       | 15          | F      | 15                 | White - British                    | 79.61                 | 84.64      | 89.97  | 103.28 | 2.30        | 0.80      | 1.6    | 3.5   | 2.8    | N/A        | N/A       | N/A    | N/A   | N/A    | 15    | N/A  | 4     | N/A  | 15                         | 28                    | Nc          |     |
|       | 16          | F      | 16                 | White - British                    | 83.27                 | 81.47      | 90.67  | 98.85  | 4.90        | 5.60      | 3.8    | 5.3   | 4.8    | N/A        | N/A       | N/A    | N/A   | N/A    | 18    | N/A  | 6     | N/A  | 24                         | 27                    | Nc          |     |
|       | 17          | F      | 16                 | White - British                    | 73.50                 | 72.42      | 83.60  | 97.45  | 4.10        | 5.20      | 2.2    | 4.4   | 4.4    | N/A        | N/A       | N/A    | N/A   | N/A    | 6     | 14   | 2     | 11   | 3                          | 26                    | Nc          |     |
|       | 18          | F      | 17                 | White - British                    | 79.51                 | 88.29      | 96.32  | 91.95  | 1.60        | 0.00      | 2.2    | 1     | 3.4    | N/A        | N/A       | N/A    | N/A   | N/A    | 9     | N/A  | 5     | N/A  | 6                          | 24                    | Nc          |     |
|       | 19          | F      | 14                 | White - British                    | 102.61                | 91.79      | 80.12  | 89.19  | 2.10        | 4.80      | 2.8    | 0.8   | 1      | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 6                          | 36                    | Yes         |     |
|       | 20          | F      | 16                 | White - British                    | 102.95                | 101.54     | 87.18  | 76.36  | 5.00        | 4.00      | 4      | 5.9   | 5.8    | N/A        | N/A       | N/A    | N/A   | N/A    | 18    | N/A  | 15    | N/A  | 14                         | 25                    | Nc          |     |
|       | 21          | F      | 12                 | White - British                    | 84.68                 | 85.17      | 96.02  | 96.80  | 4.90        | 4.20      | 4.8    | 5     | 5.6    | N/A        | N/A       | N/A    | N/A   | N/A    | 17    | N/A  | 14    | N/A  | 10                         | 19                    | Yes         |     |
|       | 22          | F      | 16                 | White - British                    | 78.54                 | 81.00      | 78.80  | 85.67  | 3.10        | 2.20      | 2.8    | 3.9   | 3.2    | N/A        | N/A       | N/A    | N/A   | N/A    | 20    | N/A  | 14    | N/A  | N/A                        | 35                    | N/A         |     |
|       | 23          | F      | 17                 | White - British                    | 82.37                 | 81.90      | 91.27  | 99.16  | 1.10        | 0.00      | 2      | 1.2   | 1.3    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 12                         | 19                    | Nc          |     |
|       | 24          | F      | 11                 | White - British                    | 85.54                 | 87.10      | 95.67  | 94.29  | 1.90        | 3.60      | 0.6    | 2.2   | 1.5    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 11                    | N/A         |     |
|       | 25          | F      | 12                 | White - British                    | 90.17                 | 81.06      | 77.57  | 77.57  | 5.60        | 5.80      | 4.8    | 5.8   | 5.9    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 7                     | Yes         |     |
|       | 26          | F      | 12                 | White - British                    | 73.04                 | 75.73      | 78.61  | 98.72  | 1.90        | 4.60      | 3.2    | 4.1   | 4.6    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 22                    | N/A         |     |
|       | 27          | F      | 15                 | White - British                    | 83.38                 | 82.56      | 92.92  | 101.24 | 3.90        | 4.40      | 2.6    | 4.2   | 4.3    | N/A        | N/A       | N/A    | N/A   | N/A    | 17    | N/A  | 6     | N/A  | N/A                        | 23                    | N/A         |     |
|       | 28          | F      | 13                 | White - British                    | 86.53                 | 87.48      | 90.37  | 93.62  | 4.00        | 3.20      | 3.6    | 3.8   | 5      | N/A        | N/A       | N/A    | N/A   | N/A    | 20    | N/A  | 13    | N/A  | N/A                        | 25                    | N/A         |     |
|       | 29          | F      | 14                 | White - British                    | 80.37                 | 82.00      | 84.46  | 93.82  | 2.10        | 1.60      | 1.4    | 2.5   | 2.8    | N/A        | N/A       | N/A    | N/A   | N/A    | 14    | N/A  | 3     | N/A  | N/A                        | 15                    | N/A         |     |
|       | UD          | 30     | F                  | 18                                 | British - Pakistani   | 78.27      | 79.13  | 80.81  | 81.82       | 1.6       | 0.2    | 1.2   | 2.4    | 2          | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | 12                    | 12          | Yes |
|       |             | 31     | F                  | 16                                 | mixed Background      | 77.33      | 74.85  | 77.21  | 71.34       | N/A       | N/A    | N/A   | N/A    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | N/A                        | N/A                   | 2           | Yes |
|       |             | 32     | F                  | 15                                 | White - British       | 72.3       | 72.58  | 72.77  | 73.9        | 1.9       | 0      | 1.2   | 3      | 2.8        | N/A       | N/A    | N/A   | N/A    | N/A   | 13   | N/A   | 11   | N/A                        | 4                     | 11          | Yes |
| 33    |             | F      | 15                 | White - British                    | 89.88                 | 92.06      | 93.3   | 86.85  | 5.3         | 4.6       | 5.4    | 5.8   | 5.2    | N/A        | N/A       | N/A    | N/A   | N/A    | N/A   | N/A  | N/A   | N/A  | 3                          | 6                     | Nc          |     |
| 34    |             | F      | 16                 | White - British                    | 89.9                  | 89.04      | 85.22  | 85.22  | 4.1         | 3.6       | 2.8    | 4.9   | 4.6    | N/A        | N/A       | N/A    | N/A   | N/A    | 19    | N/A  | 14    | N/A  | 6                          | 5                     | Nc          |     |
| 35    | F           | 17     | Other ethnic group | 89.14                              | 93.48                 | 98.41      | 98.41  | 4.1    | 4.4         | 2.2       | 4.2    | 5     | N/A    | N/A        | N/A       | N/A    | N/A   | 14     | N/A   | 12   | N/A   | N/A  | 3                          | N/A                   |             |     |

TC= Treatment Complete PD= Planned Discharge OT= Ongoing treatment UD= Unplanned Discharge

*Appendix 5: Summary report to commissioner*

Evaluating the effectiveness of Family Based Approach for young people with Anorexia Nervosa

The aims of the project was to understand whether Family Based Approach was effective for young people with Anorexia Nervosa secondary to this was then to compare people who completed the intervention compared to people who dropped out. Effectiveness of treatment was measured by clinician's decision of completing the intervention, the young person's weight for height being in the healthy range and attitudes to eating weight and shape being in the healthy range.

The data was collected from September 2017 – December 2018. During this time period 35 families started FBT. Of those who started FBT, 17 individuals were discharged by December 2018. Reasons for discharge were; 6 completed the intervention, 5 had a planned discharge and 6 had an unplanned discharge. Within those who had a planned discharge there was one individual who transitioned to adult services. There were 18 individuals in ongoing treatment.

For those who completed the intervention 5 out of 6 had a healthy weight for height and all 6 had healthy attitudes to weight and shape. This was clinically and statistically significant.

Features in the young people who completed FBT: 85% weight for height at referral which stayed similar at assessment, higher scores on the EDE-Q (global, restraint, eating, shape and weight, one third had an eating plan, two thirds participated in a family meal, lower levels of anxiety and depression, longer mean length of difficulty (11 months), missed fewer appointments, mean number of sessions 19.8 (manual suggests 20).

Features in the group who were discharged unplanned: lowest weight for height at referral, some weight gain seen at assessment, variation in EDE-Q scores (middle global score, low levels of restraint, low eating concerns, high shape concerns and weight concerns), higher levels of anxiety, higher levels of depression, more had eating plans, fewer had a family meal, missed greater number of appointments, reported the shortest length of difficulty 6.25 months.

Unplanned discharges were within the range seen for other therapies and in the research.

Recommendations:

Keep collecting data so further analysis can be completed.

Introduce a 4 week review to address concerns the families may have

Conclusions:

FBT could be effective for young people but more data would be needed to confirm this.