Original article

Written case formulations in the treatment of anorexia nervosa: Evidence for therapeutic benefits

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**Abstract**

**Objective:** Case formulation is a core component of many psychotherapies and formulation letters may provide an opportunity to enhance the therapeutic alliance and improve treatment outcomes. This study aimed to determine if formulation letters predict treatment satisfaction, session attendance, and symptom reductions in anorexia nervosa (AN). It was hypothesised that higher quality formulation letters would predict greater treatment satisfaction, a greater number of attended sessions, and greater improvement in eating disorder symptoms. **Method:** Patients were adult outpatients with AN (n=46) who received Maudsley Anorexia Nervosa Treatment for Adults (MANTRA) in the context of a clinical trial. A Case Formulation Rating Scheme was used to rate letters for adherence to the MANTRA model and use of a collaborative, reflective, affirming stance. Analyses included linear regression and mixed models. **Results:** Formulation letters that paid attention to the development of the AN predicted greater treatment acceptability ratings (*p*=.002). More reflective and respectful letters predicted greater reductions in Eating Disorder Examination scores (*p*=.003). **Discussion:** Results highlight the potential significance of a particular style of written formulation as part of treatment for AN. Future research should examine applicability to other psychiatric disorders.

**Keywords:** Case formulation, psychotherapy, anorexia nervosa, eating disorders

**Written case formulations in the treatment of anorexia nervosa: Evidence for therapeutic benefits**

Case formulation is a core component of many psychotherapies, particularly cognitive behavioural therapies (CBT)([1](#_ENREF_1)). The formulation serves as a hypothesis about the causes, precipitants and maintaining factors associated with a patient’s presenting difficulties. Cited benefits include a shared understanding of the presenting difficulties for therapist and patient; improvements in therapeutic alliance; being able to make sense of multiple presenting difficulties; the capacity to tailor evidence-based treatment strategies to the requirements of the patient; and improved treatment outcomes ([1-3](#_ENREF_1)). Evidence for these benefits, however, is mixed and there is surprisingly little research in the area.

Complicating the available research are the diverse ways in which formulations may be constructed and used in therapy. Not all therapies emphasise the collaborative sharing of case formulations between patient and therapist. Some formulations are present-focused with little attention to developmental history, whereas others include a historical perspective alongside attention to more recent events. Further, some case formulations are constructed in diagrammatic or summary form whereas certain therapies (most notably cognitive analytic therapy [CAT]) make use of written formulation letters from the therapist to the patient. It is also possible that the effects of case formulation on outcome vary according to patient characteristics or the nature of their presenting problems.

Early research found no significant differences in treatment outcomes for patients with anxiety or depression who were treated with formulation-driven CBT or behavioural therapy, and patients who were treated with a manualised treatment that did not include a formulation ([4-6](#_ENREF_4)). More recently, several small studies (*n*s=4–13) have examined the effects of written, shared case formulations on therapeutic alliance in CBT for psychosis ([7](#_ENREF_7), [8](#_ENREF_8)) and CAT for complex presenting difficulties ([9](#_ENREF_9)). These focused on changes in alliance from pre- to post-formulation and found no evidence for improvements linked to this period. Chadwick et al. (2003) and Morberg Pain et al. (2008) also looked at changes in psychotic symptoms from pre- to post-formulation and, again, found no evidence for improvements following formulation. Qualitative data from Chadwick et al. (2003) and Morberg Pain et al. (2008) provide some insight into these null results. Although therapists were generally positive about formulation work and perceived it as beneficial, feedback from patients was mixed, with some saying that the formulation helped them to feel understood and hopeful for change, but others experiencing it as highlighting the complexity of their problems and making change seem overwhelming.

If case formulations alone do not predict treatment outcome, it is possible that the *quality* of formulations may do so. Independent ratings of formulation quality have been found to correlate positively with years of therapist experience, when ‘quality’ is defined in relation to the accuracy and breadth of information summarised ([10](#_ENREF_10), [11](#_ENREF_11)). However, a recent study found that formulation quality was inversely related to outcome in a sample of 15 adults with anorexia nervosa (AN) ([12](#_ENREF_12)). This study used a case series design to examine changes in weight over the course of outpatient CBT or CAT. Seven of 15 patients showed improvements in weight over treatment, and in five of these cases, improvements occurred after the formulation was shared. Formulation quality was rated using the Case Formulation Content Coding Method-Revised (CFCCM), which assesses comprehensiveness, elaboration of explanatory mechanisms, precision of language, complexity, coherence, and treatment planning ([13](#_ENREF_13)). Unexpectedly, higher quality ratings were found for the formulations of patients who did *not* gain weight ([12](#_ENREF_12)). There are a number of possible explanations for this, including the hypothesis that patients with more complex backgrounds or resistant symptoms invite greater formulation efforts from their therapists. Regardless, the results make it difficult to view formulation quality as a predictor of positive treatment outcomes, at least when defined by CFCCM scores. Further to this, family-based treatment (FBT) has the greatest evidence base for adolescent AN but does not make use of a formal formulation at all (although an informal formulation exists in the focus on how families organise themselves around AN; see ([14](#_ENREF_14))).

In sum, there is a strong theoretical rationale for case formulation in psychotherapy but very little empirical data to support the effectiveness of this in relation to therapeutic alliance or symptom improvements. At the same time, there are almost no data on the quality of case formulations and definitions of ‘quality’ have focused on accurate descriptions of symptoms. Some patients may find symptom description overwhelming rather than encouraging ([7](#_ENREF_7), [8](#_ENREF_8)), suggesting that it may be important to attend to other characteristics of case formulations to understand how they impact on treatment.

The Maudsley Anorexia Nervosa Treatment for Adults (MANTRA) emphasises a particular style of written case formulation as a key component of therapy. This treatment was developed with reference to a cognitive-interpersonal maintenance model and proposes that four key factors are related to the maintenance of AN: a thinking style characterized by inflexibility and excessive attention to detail, social and emotional difficulties, positive beliefs about AN, and responses of close others ([15](#_ENREF_15)). Treatment aims to address these maintaining factors and also makes use of a motivational interviewing style. This is used to guide formulation letters, which therapists write using a motivational stance. In this way, the letter is seen as providing an opportunity to enhance the therapeutic alliance and motivate change, and it forms an important foundation for treatment. There is good evidence for the efficacy of MANTRA in the treatment of AN ([15](#_ENREF_15)) but, to date, no research has explored the impact of formulation letters on treatment.

This study aimed to extend research on case formulation and psychotherapy outcome by determining if the quality of formulation letters in MANTRA predicts treatment outcomes for adults with AN. Formulation quality was defined in terms of Total and item scores on the MANTRA Case Formulation Rating Scheme (MANTRA-CFRS), which was developed for this research and is described in the Method section. Treatment outcome was defined in terms of patient-reported treatment satisfaction, the number of attended therapy sessions, and improvements in eating disorder symptoms, including Body Mass Index (BMI) and Eating Disorder Examination (EDE) scores. It was hypothesised that higher quality formulation letters (higher MANTRA-CFRS ratings) would predict higher treatment satisfaction ratings, a greater number of attended sessions, and a greater degree of symptom improvement over treatment.

**Method**

**Participants and procedure**

Participants were adult outpatients with AN who participated in the Maudsley Outpatient Study of Treatments for Anorexia Nervosa and Related Conditions (MOSAIC). This study, described in full previously ([15](#_ENREF_15), [16](#_ENREF_16)), was a multi-center randomised controlled trial (RCT) comparing MANTRA to Specialist Supportive Clinical Management (SSCM) ([17](#_ENREF_17)). Participants for the RCT (*n=*142) were recruited from the catchment areas of four specialist NHS eating disorder services in the UK. Consecutive outpatients referred to these services were invited to participate if they were aged 18 to 60 years and had a DSM-IV diagnosis of AN or Eating Disorder Not Otherwise Specified (EDNOS), AN-like, with BMI ≤18.5. Participants were excluded if they required immediate inpatient treatment, had insufficient English to participate, or had learning disability, severe mental or physical illness requiring treatment in its own right, substance dependence, or pregnancy. Both MANTRA and SSCM involved 20 weekly sessions of individual therapy followed by four monthly follow-up sessions, or for patients with a BMI ≤15, 30 weekly sessions followed by four follow-ups. All participants provided written consent to participate and approval was obtained from the local human research ethics committees.

Participants attended research assessments at baseline (pre-randomisation), after 3 months (mid-treatment), after 6 months (end-of-treatment) and after 12 and 24 months. Assessments were conducted by trained researchers blind to treatment condition. Data for this study were drawn from the baseline and 6-month (end-of-treatment) assessments.

Participants for this research were patients who were randomised to MANTRA (*n*=72) and who remained in treatment long enough for a formulation letter to be written (letters are usually written between sessions 4 and 10; *n=*46, 65% of the MANTRA sample). In order to check for bias between those who were included and those who were excluded, these two groups were compared. There were no significant differences between MANTRA participants with (n=46) and without (n=26) formulation letters in baseline eating disorder symptoms, general psychopathology, or demographic information. As expected, participants with formulations attended a significantly greater number of sessions than participants without (*F*[1, 64]=21.35, *p*<.001). Means (and SD) for age, duration of illness and pre-treatment eating disorder symptoms are shown in Table 1.

 [TABLE 1]

**Therapists**

 Therapists were 28 experienced eating disorder therapists (clinical psychologists, counselling psychologists, psychotherapists and nurse therapists) who received intensive training in MANTRA and SSCM before the commencement of the trial and ongoing supervision throughout.

**Formulation letters and ratings of quality**

 In MANTRA, the formulation is constructed in session, jointly by the therapist and patient, early in the therapy contact (generally between session 4 and 10) ([18](#_ENREF_18)). It focuses on the development of the AN and what is keeping it going, with reference to the MANTRA cognitive-interpersonal model. Following this in-session work the therapist summarises discussions in a formulation letter to the patient. The letter has a dual focus on describing the content of the formulation and on fostering motivation and engagement by using the motivational style that is key to MANTRA. Therapists were given example formulation letters to guide their writing and received supervision in letter writing by the senior author, US.

 For this research, a MANTRA Case Formulation Rating Scheme (MANTRA-CFRS) was developed so that letters could be rated for their adherence to the MANTRA model and style. The scheme was developed by the authors with reference to the CFCCM ([13](#_ENREF_13)) as well as the Collaborative Case Conceptualization Rating Scale (CCCRS)([19](#_ENREF_19)) and Working Alliance Inventory ([20](#_ENREF_20)). The MANTRA-CFRS is included at the end of the manuscript. Items 1a through 1c rate adherence to the MANTRA model: the degree to which the letter addresses the development (1a) and maintenance (1b) of AN and attends to treatment goals and possible ways forward from the illness (1c). Items 2a through 2d rate adherence to the MANTRA style: use of collaborative (2a), reflective and respectful (2b), affirming (2c) and empathic, compassionate (2d) language. These items are all rated on a 4-point scale ranging from 0 (no attention to area) to 3 (strong attention to area), as in the CCCRS. Individual item ratings can be summed to give a Total score ranging from 0 to 21.

 As noted, we hypothesised that higher MANTRA-CFRS scores would predict more positive treatment outcomes. However, we did not make specific predictions regarding the relative importance of individual CFRS items.

**Reliability**

After the MANTRA-CFRS was developed, it was trialled with MANTRA formulation letters from patients notseen in the MOSAIC study (patients from routine practice). The first and last authors (KA, US) co-rated letters independently with subsequent discussion of ratings until exact agreement was reached. Where necessary, clarifications were made to the guidance notes for the MANTRA-CFRS across this phase.

Once rating agreement was consistently reached, KA and US independently rated five formulation letters from the MOSAIC study sample (participants in this study). Inter-rater reliability was high for these ratings: *r*s=.98 for Total scores and .87-1.0 for individual item scores (*p*s<.05). All subsequent letters were rated by KA.

The MANTRA-CFRS showed good internal consistency (α=.84 for all items and α=.80 for the Total score).

**Outcome measures**

**Treatment satisfaction.** Patients were asked to rate how *acceptable* and how *credible* they found therapy at their end-of-treatment assessment (two items). Ratings were made on 10-point visual analogue scales.

**Number of sessions attended.** The number of therapy sessions attended was recorded by therapists. When treating this as a continuous variable, the maximum number of sessions was capped at 20 as only patients with very low BMIs (≤15) were offered 30 sessions. Additionally, a categorical variable was computed where patients were classified as completing or not completing therapy (where completion may have been 20 or 30 sessions).

**Eating Disorder Examination (EDE)(**[**21**](#_ENREF_21)**).** The EDE is a semi-structured diagnostic interview that generates 4 subscale scores (dietary restraint, eating concern, weight concern, shape concern) and a global score (the mean of the subscale scores). It has well-documented reliability and validity ([21](#_ENREF_21)). The Global score was used as an index of eating disorder psychopathology. Higher scores indicate more severe cognitive and behavioural eating disorder symptoms.

**Body Mass Index (BMI).** Body mass index was calculated using the standard formula (weight [kg] / height [m]2) using measured height and weight.

**Additional measures**

 Baseline psychosocial functioning was assessed using a series of self-report questionnaires. Scores on these measures were considered as possible predictors of MANTRA-CFRS scores (as patient characteristics may have influenced therapist formulation efforts) and covariates in analyses.

These questionnaires included the **Beliefs about Emotions Scale (BES)**([22](#_ENREF_22)); **Clinical Impairment Assessment (CIA)**([23](#_ENREF_23)); **Cognitive Flexibility Scale (CFS)**([24](#_ENREF_24)); **Depression Anxiety and Stress Scale (DASS-21)**([25](#_ENREF_25)); **Emotion Regulation Questionnaire (ERQ)**([26](#_ENREF_26)); **Obsessive Compulsive Inventory Revised (OCI-R)**([27](#_ENREF_27)); and **Social Comparison Scale (SCS)**([28](#_ENREF_28)).All have well-established psychometric properties.

**Motivational and Social Visual Analogue Scales** were also used to assess motivation to change (four items) and perceived support with change (two items). Motivation items asked about perceived *importance* of change (overall and in relation to increasing food intake and weight) and *ability* to change (again, overall and in relation to food and weight). Responses could range from 1 to 10 and were averaged to provide an overall motivation score.

Social support items assessed the degree to which patient’s felt able to confide in close others, and how close they would rate their relationships with others. Again, responses could range from 1 to 10 and were averaged to provide an overall social support score.

**Analyses**

**Descriptive analyses.** Means, standard deviations and ranges were examined for the MANTRA-CFRS scores (Total and item scores). Correlations were then examined between MANTRA-CFRS scores and baseline patient characteristics. Baseline variables that correlated significantly with MANTRA-CFRS scores were adjusted for in analyses.

 **Hypothesis testing.** Linear regression was used to examine associations between MANTRA-CFRS ratings (Total and item scores) and patient ratings of treatment acceptability and credibility (Hypothesis 1).

To determine whether MANTRA-CFRS ratings related to the number of therapy sessions attended (Hypothesis 2), correlations were examined between MANTRA-CFRS scores and the number of sessions attended. In addition, mean MANTRA-CFRS scores were compared between patients who did and did not complete therapy.

To determine whether MANTRA-CFRS ratings related to symptom improvement (Hypothesis 3), linear mixed models were used to test for longitudinal associations between formulation ratings and improvement in BMI and Global EDE scores across treatment.

Given the modest sample size and potential importance of any identified effects, an unadjusted alpha of *p*<.05 was used for all analyses. This decision increases the risk of Type I error, but it also increases the likelihood that any factors relevant to AN outcome will be identified. This is important given the relative lack of data on predictors of AN outcome and the low remission rates seen in AN treatment studies.

**Results**

**Descriptive statistics**

Means, standard deviations and ranges for MANTRA-CFRS scores are shown in Table 2. Scores suggest good adherence to the MANTRA model, but with considerable variation across formulations. Most items were moderately negatively skewed (skewness statistics=-1.29 to -0.24).

[TABLE 2]

Total MANTRA-CFRS scores correlated significantly and positively with all individual item scores (*r*s=.36 - .76, *p*<.001).

Baseline patient characteristics did not correlate significantly with Total MANTRA-CFRS scores, but did correlate significantly with five item scores. Higher scores on item 1a (development) were significantly and positively associated with BES scores (*r*=.40, *p*=.006) and higher scores on item 1b (maintenance) were significantly and positively associated with DASS scores (*r*=.30, *p*=.049). This suggests that therapists paid more attention to the development of AN when their patients held beliefs about emotions being unacceptable, and paid more attention to the maintenance of AN when their patients endorsed depressive, anxiety and stress symptoms. Higher scores on items 1a (development) and 1b (maintenance) also correlated significantly and negatively with SCS scores (*r*= -.31, *p*=.040 and *r*= -.30, *p*=.048), suggesting that therapists paid more attention to the development and maintenance of AN when their patients compared themselves negatively to others. Finally, higher scores on item 2d correlated significantly and negatively with social support scores (*r*= -.35, *p*=.019), suggesting that therapists were more empathic in their writing when their patients reported less close relationships with others.

**Hypothesis 1.** In linear regression models, a trend level (but non-significant) association was observed between Total scores and treatment acceptability (*β*=.29, *p*=.06). The association with treatment credibility was not significant (*β*=.26, *p*=.10).

Only one subscale item emerged as a significant predictor of treatment acceptability. Higher scores on item 1a (development) predicted significantly higher acceptability ratings (*β*=.45, *p*=.003), although not credibility ratings (*β*= .20, *p*=.220). The association was strengthened after adjustment for BES and SCRS scores (*β*=.54, *p*=.002). This effect suggests that formulation letters that pay thorough attention to the development of AN (i.e., an item score of 3) may be expected to predict treatment acceptability ratings that are 2 units higher, on a 10-point scale, than formulation letters that pay no attention to the development of AN.

**Hypothesis 2.** None of the MANTRA-CFRS scores correlated significantly with number of sessions attended (*r*s = -.24 - .25, *p*s=.06-.79). There were no significant differences in mean scores between patients who completed therapy and those who did not (*p*s=.25-.95).

**Hypothesis 3.** In linear mixed models, there were no significant effects of Total scores on pre- to post-treatment changes in BMI (*F*[1, 105]=0.10, *p*=.758) or Global EDE scores (*F*[1, 93] = 0.23, *p*=.630).

One individual item, item 2b (reflective and respectful tone), was significant in predicting improvements in Global EDE scores (*F*([, 92]=9.01, *p=*.003). A 1 unit increase on item 2b was associated with a 0.43 decrease in Global EDE scores. Thus, letters that adopted a highly respectful tone would be expected to predict post-treatment reductions in Global EDE scores that were 1.72 units lower, on a 7-point scale, than letters that placed the therapist as the expert. The same association was not seen for BMI (*F*[1, 104]=1.47,*p=*.228).

**Discussion**

This study sought to extend the small body of empirical research on case formulations and psychotherapy outcomes. More specifically, the study aimed to examine associations between the quality of formulation letters in MANTRA and treatment outcomes for adult patients with AN. Contrary to predictions, overall ratings of formulation quality (Total scores) were not significantly associated with outcomes or the number of sessions attended, although trend-level associations were seen for treatment acceptability. However, specific associations were found between attention to the development of AN and patient ratings of treatment acceptability, and between use of a respectful and reflective tone and improvements in severity of eating disorder symptoms.

It is interesting that only certain items predicted outcome, as this is consistent with the possibility that case formulation alone does not impact on treatment progress, but that certain aspects of the formulation may do so. Historically, research in this area has focused on the presence or absence of a formulation rather than formulation quality. This is problematic when considering that some patients may find formulations overwhelming and that formulations will be constructed in different ways across different psychotherapies and by different therapists. There have been some past efforts to rate formulations for quality, but these have focused on the content of formulations rather than their style. Results from this study suggest that historical content (a developmental perspective) and a reflective style may be specifically related to outcome, at least for adults with AN treated with MANTRA. The findings relating to reflective style may overlap with the broader research on therapeutic alliance, which is recognised as a key predictor of therapy outcome.

If these results generalize to other samples, there will be clear implications for the treatment of adult AN, which is notoriously difficult to treat. Any factors that may foster engagement and facilitate symptom reduction deserve attention. Focusing on the development of AN in formulation work, and applying a motivational style to the summary of formulation discussions, are strategies that could be applied across treatment approaches with appropriate therapist training. Further research seems warranted to see if the results observed here apply with other samples and in other treatment approaches.

The results of this research also have implications for case formulation more generally. Formulations are often thought of as an opportunity to summarise currentdifficulties and their maintaining factors ([1](#_ENREF_1)) and psychology training programmes have traditionally emphasised these aspects of formulation work. Results from this study suggest that therapists may benefit from prioritising the description of historical information and focusing on their formulation style (i.e., a reflecting and respectful tone), at least when working with AN. This need not result in the omission of information on maintaining mechanisms, but could guide the relative emphasis given to this area. These points are also relevant when considering variations in style across psychotherapies. In CBT, the focus is often thought of as present-focused and technique-driven, compared to psychodynamic approaches which may be seen as having a greater historical emphasis and paying more attention to the therapeutic relationship. Of course, CBT case formulations do attend to distal as well as proximal relationships and there is a solid body of evidence on the importance of the therapeutic relationship in CBT ([29](#_ENREF_29)). The results of this research highlight that it may be important for *all* psychotherapies to consider historical information and formulation style.

This study has a number of strengths, including the use of a comprehensive measure of formulation quality; attention to the content and style of formulation letters; and consideration of different components of treatment outcome. Whilst small, the sample is also notably larger than many past studies in the area (e.g., *n*s=4-13) and the study adds to an extremely small body of past research in this area. At the same time, the results need to be interpreted in the context of several limitations. First, the modest sample size allows for the possibility of type I error, particularly as statistically significant effects were only seen at an item-specific level. Further, the sample included adult outpatients with AN who were treated with MANTRA, and it is unclear whether results will generalise to other presenting difficulties or treatment modalities. Second, this is the first application of the MANTRA-CFRS, which was developed specifically for this research. The MANTRA-CFRS builds on previous case formulation rating scales and showed satisfactory internal consistency and inter-rater reliability. Again, however, its capacity to generalize to other samples is unclear. Third, we focused on particular aspects of treatment outcome as measured at post-treatment. The impact of formulation quality on longer term symptom changes, or other outcomes, is unclear. These limitations make replication and extension important. It is also possible that other factors are accounting for the identified links between formulation quality and treatment outcomes, as therapist experience, the quality of assessment, and the quality of the therapeutic alliance may be expected to impact on both the formulation and treatment outcomes. Future studies may benefit from considering these possible covariates.

In summary, this study provides new evidence for associations between case formulation and treatment outcome, but suggests that these associations may be specific and limited. In this sample of adults with AN, attention to the development of AN predicted treatment satisfaction, and use of a respectful and reflecting tone predicted improvements in eating disorder symptoms. Attention to current maintaining factors did not predict outcomes. Further research is needed to evaluate the generalizability of these findings, but it would seem important for therapists to consider the style as well as content of their formulation letters.

 **MANTRA Case Formulation Rating Scheme**

**(1) Adherence to model:**

**(a) Developmental aspect:** Letter mentions ‘what the patient brings to the illness’ i.e. traits, key challenges in their life, strengths and supports. Where this is done well this will go beyond description of the patient as anxious or perfectionist, but will give some illustration of the extent of this and where this has mattered in their life.

0=no mention of this

1=description or list without illustration or impact on life

2= illustration of the extent OR impact on life

3=fully including illustration of BOTH the extent and how this has impacted e.g., *“even as a child you always were anxious about pleasing people which included eating healthily in order to please your parents. Over your lifetime this characteristic has often caused you to be upset about having possibly offended or hurt someone, and currently this opens the door to binges when you are upset about this.”*

**(b) Maintenance aspect:** Letter mentions key maintenance factors (thinking style, valued nature of AN, socio-emotional difficulties and/or how close others maintain the illness) and gives examples of how these manifest in the patient’s life.

0=no mention of this

1=mention of factors without examples

2=mention of factors with limited example

3=fully including mention of factors and different examples that illustrate variety of manifestations e.g., *“being in control and being perfect has been very important to you, and anorexia has supplied a means by which to control your life. However, as you noted this week, it is also now controlling your life and clutching on to you like a blackberry bush, where the anorexia nervosa intensifies your self-critical voice if you do not always reach your high standards, and has been very cunning in helping you ignore the achievements that you do make”*.

**(c) Letter includes a way forward**: a focus on how the remaining sessions will be used to address the patient’s difficulties is included. Acknowledgement of change as a process and a ‘journey’ and acknowledging both bigger picture aspirations and process goals, and reminding them of the courage and strengths that they have to navigate the journey.

0=no mention of this

1=outline of focus in remaining sessions only

2=outlines way forward and invokes idea of a journey towards bigger picture

3=as above in (2) and includes hope for their ability to make the journey (whatever that journey involves and allowing for differences in patients’ readiness to change) e.g., *“It is clear to me that you place great importance on other aspects of yourself, apart from an ability to maintain a low weight and control your eating. This includes being a caring and generous person, your friendships, your medical career, having a healthy body, being a spontaneous and fun person, and an ability to care about the wider issues in the world. It is these important characteristics that can help you fight the anorexia and make headway against it such that you can reclaim your life.”*

**(2) Interpersonal aspects of letter:**

**(a) Collaborative stance** (e.g. ‘together we have discovered…..’. )

0=language placing therapist as expert

1=no collaborative statements

2=some collaborative statements, but somewhat formulaic

3=collaborative stance permeates the letter, as evidenced by reference to joint discoveries and experiences and/or joint goals, e.g., *“We have been able to determine that...”,* “*We thought that it may be important to...”.*

**(b) Reflective, respectful of patient’s views, and/or adopting one-down position** (e.g. ‘this is my attempt to understand you…I may not have got it all right…’ Includes using tentative language, putting forward hypotheses, e.g. ‘I wonder…’,’ I sense…’…’Perhaps’ …..)

0=language placing therapist as expert

1=no use of one-down position or tentative language.

2=some use of one down position or tentative language , but somewhat formulaic

3= Reflective, respectful, one-down position permeates letter, e.g. “*I look forward to our future sessions where we will work towards your goals and aspirations, should you feel that you are now ready to allow anorexia to loosen its grip”.*

**(c) Affirming stance:** Use of affirmation, i.e. positively and warmly connoting the patient’s efforts (e.g. ‘I have been very impressed by…..)

 0 =presence of any negative statements/connotations

1=no affirmative statements

2=some use of affirmative statements , but somewhat formulaic

3=Affirmation permeates letter, e.g*.” I have been very impressed with how, despite your difficulty with opening up to others and accepting help, you have made use of your best friend for support. Moreover, despite your misgivings of letting your mum into things you have gone to stay with your parents twice over the summer and this has gone much better than you thought. You allowed yourself to be guided by your mum with regard to your eating and felt physically much better as a result”.*

**(d) empathic and/or compassionate stance** (e.g. reflecting on what certain events or difficulties must have felt like for the patient, reflecting emotion and acknowledging the patient’s struggle/difficulties in the context of the therapist’s own emotions)

0=evidence of therapist being critical or judgemental

1=no empathic or compassionate statements

2=some use of empathic/compassionate statements, but somewhat formulaic

3= empathic compassionate stance permeates letter, e.g*.”I felt very privileged that you were brave enough to show me ‘the bits of you that others cannot and do not see’. Behind the cheerful, competent and independent front that you put on for others is a person who at times feels desperately in need of closeness and comfort and who is very angry and upset that others do not identify or respond to her needs. In this context it was very painful for you to talk about the fact that you have a strong sense that your parents and in particular your dad have always been much more receptive to your brother’s ideas and plans and supported them practically and emotionally, whereas your ideas and plans were somewhat ignored or not taken seriously.”*

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*Table 1*

Descriptive statistics for MANTRA participants with and without formulation letters

|  |  |  |
| --- | --- | --- |
|  | With formulation letter (n=46) | Without formulation letter (n=26) |
| Age | 26.83 (8.06) | 27.23 (8.53) |
| Age of onset | 17.86 (7.09) | 16.13 (5.15) |
| Duration of illness | 9.01 (7.27) | 9.96 (9.15) |
| BMI | 16.70 (1.24) | 16.45 (1.04) |
| Global EDE score | 3.24 (1.35) | 2.95 (1.21) |
| Individual sessions attended | 21.24 (4.97) | 14.14 (7.34)\* |

*Note.* BMI = Body Mass Index, EDE = Eating Disorder Examination, MANTRA = Maudsley Anorexia Nervosa Treatment for Adults.

\* Significant between-group difference at *p* < .001

*Table 2*

Means, standard deviations and ranges on the MANTRA Case Formulation Rating Scheme

|  |  |  |
| --- | --- | --- |
|  | Mean (SD) | Range |
| Item 1a (development) | 1.72 (1.15) | 0-3 |
| Item 1b (maintenance) | 2.13 (0.88) | 0-3 |
| Item 1c (way forward) | 2.09 (0.86) | 0-3 |
| Item 2a (collaborative) | 2.24 (0.97) | 0-3 |
| Item 2b (respectful) | 1.78 (0.94) | 0-3 |
| Item 2c (affirming) | 2.37 (0.83) | 0-3 |
| Item 2d (empathic) | 1.93 (0.93) | 0-3 |
| Total score | 14.26 (4.42) | 3-20 |

*Note.* MANTRA = Maudsley Anorexia Nervosa Treatment for Adults. Items 1a through 2d have a possible range of 0 to 3.The Total score is the sum of items 1a through 2d and has a possible range of 0 to 21.