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Brief group intervention targeting perfectionism in adults with anorexia nervosa: empirically informed protocol

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| Abstract: | <p>Objective: This study aimed to evaluate the perfectionism group intervention in adults with Anorexia nervosa (AN) in an inpatient setting.</p> <p>Method: Adults with AN (N=29) received six weekly sessions of the empirically informed intervention with experiential exercises. Participants' self-reported perfectionism was assessed on Frost MPS questionnaire and Clinical Perfectionism Questionnaire pre- and post-group. Patient satisfaction questionnaire was collected after completion of the group.</p> <p>Results: Statistically significant, moderate size changes were observed for overall perfectionism, concern over mistakes and personal standard dimensions of perfectionism. The feedback questionnaires confirmed the clinical significance impact of the perfectionism group, e.g. patients found the sessions useful and felt confident in using the skills they learnt in the group.</p> <p>Conclusions: The revised perfectionism group with experiential exercises seemed to be a practical and helpful intervention for patients with AN in inpatient programme.</p> |
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Title:

Brief group intervention targeting perfectionism in adults with anorexia
nervosa: empirically informed protocol

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Abstract:

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Results: Statistically significant, moderate size changes were observed for overall perfectionism, concern over mistakes and personal standard dimensions of perfectionism. The feedback questionnaires confirmed the clinical significance impact of the perfectionism group, e.g. patients found the sessions useful and felt confident in using the skills they learnt in the group.

Conclusions: The revised perfectionism group with experiential exercises seemed to be a practical and helpful intervention for patients with AN in inpatient programme.

Keywords: perfectionism; Anorexia Nervosa; group therapy; inpatient treatment; creative exercises

Introduction:

Perfectionism has been proposed as a target for interventions in Anorexia nervosa (AN) (Egan, Wade, & Shafran, 2011). It is a multi-dimensional personality trait characterised by the setting of extremely high and demanding standards, which a perfectionist individual strives for and bases their self-evaluation upon (Frost, Marten, Lahart, & Rosenblate, 1990). Perfectionism has been associated as both a risk and maintaining factor across a range of psychiatric disorders (Shafran & Mansell, 2001), with evidence that perfectionism is elevated in AN compared with other psychiatric disorders (Bardone-Cone et al., 2007). Furthermore, disordered eating has been found to be associated with perfectionism in a non-clinical sample (Bento et al., 2010). Perfectionism has been found to impact treatment outcomes, by being a predictor of poor treatment prognosis and treatment attrition rate (Bizeul, Sadowsky, & Rigaud, 2001; Keski-Rahkonen et al., 2014; Sutandar-Pinnock, Woodside, Carter, Olmsted, & Kaplan, 2003).

In a recent systematic review it was highlighted that it is possible to reduce aspects of perfectionism using a cognitive behavioural approach in adults with perfectionism in different diagnostic groups (Lloyd, Schmidt, Khondoker, & Tchanturia, 2014). Few studies to date (Goldstein, Peters, Thornton, & Touyz, 2014; Lloyd, Fleming, Schmidt, & Tchanturia, 2014; Steele & Wade, 2008) have investigated the effect of focused interventions to reduce perfectionism and its impact in the treatment of eating disorders. Importantly, they have all presented potential benefits of the intervention. Patient feedback regarding such interventions has been positive and suggesting a

range of perceived benefits for patients with AN (Lloyd, Fleming, et al., 2014; Lloyd, Schmidt, Khondoker, & Tchanturia, 2015). Psychological interventions in a group format have previously presented similar results as individual therapies (Tchanturia & Sparrow 2015) and can bring unique benefits that are not achievable when working with patients individually (Yalom, 2005).

The perfectionism group intervention for AN adults included in the original small pilot study (Lloyd, Fleming, & Tchanturia, 2015; Lloyd, Fleming, et al., 2014) was based upon the cognitive behavioural model of perfectionism developed by Shafran and colleagues (Shafran, Cooper, & Fairburn, 2002) and included information, worksheets and activities taken from the Centre for Clinical Intervention's 'Perfectionism in Perspective' module (Centre for Clinical Interventions, 2002). After several runs of the group, outcomes from 21 participants were evaluated and the study concluded that a six session group format created a moderate size decrease in several domains of perfectionism.

After analysing the qualitative feedback from clinicians and patients from Lloyd and colleagues (2014) study, emerging empirical evidence, as well as patients' collective perspective on multiple inpatient group treatments (Sparrow & Tchanturia 2016), the group protocol was revised in line with experimental work and additional practical adjustments to make the group more interactive and easier for patients to engage in. After experimental work in the area (Lloyd, Yiend, Schmidt, & Tchanturia, 2014) we decided to translate behavioural observations made in the study to clinical work. We were guided by both empirical evidence suggesting that people with AN spend longer time on a task compared to non eating disorder controls, to try to accomplish it

perfectly, but also by clinical experience suggesting that when patients are given opportunity to 'play', explore and take part in specific activities and tasks in the individual or group setting, it facilitate a more experiential learning. Patients' comments included suggestions to add more practical examples and role play how to change behaviours (e.g. in cognitive remediation therapy and previously piloted CBT based perfectionism group; Tchanturia, Lounes, & Holttum, 2014, Sparrow & Tchanturia 2016).

We have found that active participation in the session through the use of interactive activities allows participants to become more aware and reflect in the present time, as well as making use of the group time more efficiently. Previously, facilitators have tried to fill the time with educational materials and found it difficult to engage all group members attending the group in group discussions. Instead creative and interactive exercises provide strategies to: 1) illustrate problem in a very specific way; 2) engage facilitators and group members and focus on the problem; 3) it is easier to remember the content of the session when it is associated with game and activities; 4) it is easier to set up similar homework tasks or ecological analogue in real life situations. Thus, we decided to incorporate active experiential exercises along with psychoeducational materials and discussions, to allow the participants in the group to complete tasks, reflect and discuss various aspects of perfectionism.

Aims:

This study aims to evaluate the revised perfectionism group in adults with AN in the inpatient treatment programme. We are also aiming to discuss possible future developments and how to generate further evidence for group perfectionism work.

Methods:**Participants:**

All in-patients in the national adult eating disorder inpatient programme of the South London and Maudsley NHS Foundation Trust were eligible for participation. 35 patients attended the first session of the group. Data is presented for 29 (82%) participants who completed the group and both pre and post-group measures. Participants completed pre-intervention questionnaires at the beginning of the first session and post-intervention questionnaires at the end of the final session.

All participants had a primary diagnosis of AN (based on DSM-5 criteria). Fifteen participants (54%) had a formal diagnosis of restricting AN, eleven (39%) had a diagnosis of AN binge-purge, and two (7%) had a diagnosis of atypical AN. Participants were aged between 18 and 45 years with a mean age of 27.4 years (SD=8.9). Participants had a mean length of illness duration of 11 years (SD=7.7), with a mean age of onset of 15.9 years (SD=3.7).

Participants at all stages of the treatment program were invited to attend the group. All participants received additional clinical input during the treatment, including nutritional, medical, individual therapy and therapeutic groups as part of the inpatient programme.

Self-report measures:

Frost Multi-Dimensional Perfectionism Scale (FMPS; Frost et al., 1990)

A 35-item questionnaire assessing different aspects of perfectionism; concern over mistakes, personal standards, doubts about actions, parental criticism, parental expectation, and organisation. The scale gives a total score between 35 and 175, with higher scores representing greater impairment. FMPS has shown a high internal reliability and construct validity (Franco, Díaz, Torres, Telléz, & Hidalgo-Rasmussen, 2014). In the current study, the overall Cronbach alpha coefficient was 0.95.

The Clinical Perfectionism Questionnaire (CPQ; Riley, Lee, Cooper, Fairburn, & Shafran, 2007; Steele et al., 2013)

A 12-item self-report measure assessing clinical perfectionism. Participants are provided with a definition of perfectionism and asked what areas of their lives this affects other than their eating, weight or appearance. The scale is rated over the past 28 days on a 4-point Likert scale ranging from 1 (not at all) to 4 (all the time). The scale gives a total score between 12 and 48, with higher scores indicating higher clinical perfectionism. The CPQ has shown a high internal reliability and construct validity (Egan et al., 2016). In the current study, the overall Cronbach alpha coefficient was 0.74.

Feedback questionnaire

The patients were also given a feedback form in the last session. The questionnaire first asked patients to rate on a 5-point Likert scale how much they enjoyed the sessions; how useful the sessions were; whether they had learnt any new skills and what they thought about the length of the group. In addition, there were 2 open-ended

questions asking patients what they liked most about the sessions and what could be improved.

The Perfectionism group:

The overall aim of the perfectionism group was to increase awareness of perfectionism and to identify and challenge perfectionist behaviours and perfectionist thinking. The group also focused on encouraging patients to adapt their excessively high standards and replace these with more appropriate standards that are manageable and achievable.

The group was delivered by two facilitators, at least one of whom was a counselling or clinical psychologist. Groups had a mean of five participants attending per session. The group consisted of 6 sessions and all sessions included the following elements: psychoeducation, practical exercises and games, reflection and discussion, as well as planning of homework tasks and challenges to try outside the group (for details of manual: www.katetchanturia.com –publication section; http://media.wix.com/ugd/2e1018_30ae3d73908449f397bbb9a8f7a72288.pdf)

The topics of the sessions were 1) ‘What is perfectionism, advantages and disadvantages of perfectionism’, 2) ‘How did I become a perfectionist and what makes up perfectionism’, 3) ‘Managing perfectionism, adapting/adjusting perfectionist behaviours’, 4) ‘Challenging perfectionist thinking and adjusting unhelpful rules and assumptions’, 5) ‘Re-evaluation of the importance of achievement’.

Weekly homework was set, asking participants to monitor their perfectionism and trying to notice the costs and benefits of their perfectionism (Session 1) and putting into practice a series of steps planned in session to reduce perfectionist behaviours (Session 3 onwards). The last session involved a review of the group and an opportunity to make something with modelling clay, representing what each participant had learned from the group.

Procedure:

The group ran once a week over 6 weeks and each session lasted one hour. Patients completed the questionnaires before the beginning of the first session and again at the end of the final session. Feedback questionnaire was completed at the end of the group.

Data analysis:

Paired t-tests were conducted on the scores from each of the outcome measures from the first and final sessions using SPSS version 22. Cohen d effect sizes were computed for the measures (Cohen, 1988).

Results:**Treatment completion:**

Non-completion was defined as either non-completion of sessions or non-completion of assessment at time two. 82% of the participants completed the group. Reasons for non-completion of the group were recorded; did not complete time two questionnaires (50% of non-completers), discharged from service (25%), the remaining participants

(25%) attended two or fewer sessions, suggesting lack of engagement. The mean number of sessions attended by those classed as completers was five.

Clinical perfectionism:

Mean scores, standard deviations and results from t-tests, including effect sizes, on all outcome measures after the first and last sessions are displayed below in Table 1.

Table 1. Outcome variables at time one and time two

| Variable | N (%) | T1 | T2 | t | p-value | Effect size (d) |
|-----------------------------|----------|--------------|--------------|-----|---------|-----------------|
| F-MPS total | 29 (100) | 112.0 (23.3) | 106.0 (19.4) | 2.6 | 0.01** | 0.3 |
| F-MPS Personal Standards | 29 (100) | 30.2 (4.6) | 28.9 (4.2) | 2.2 | 0.04* | 0.3 |
| F-MPS Concern over Mistakes | 29 (100) | 36.7 (8.8) | 34.1 (8.0) | 2.3 | 0.03* | 0.3 |
| F-MPS Doubts about Actions | 29 (100) | 16.4 (3.6) | 16.1 (2.7) | 0.6 | 0.56 | 0.1 |
| CPQ | 29 (100) | 34.7 (7.4) | 31.9 (7.2) | 3.0 | 0.005** | 0.4 |
| BMI | 29 (100) | 15.4 (2.2) | 16.1 (2.2) | 3.3 | 0.002** | 0.3 |

**=Significant at .01. *=Significant at .05.

N= number of the participants; FMPS= Frost Multi-dimensional Perfectionism Scale; CPQ= the Clinical Perfectionism Questionnaire; BMI = Body Mass Index

The participants had a mean F-MPS total score of 112.0 (SD=23.3) prior to the group intervention, well above that observed in previous studies (see Table 3, supplementary material). There were significant differences in the pre- and post-group scores on both self-report perfectionism measures.

Patient feedback:

Figure 1

The means show that patients enjoyed the group, found sessions useful and have used some skills and strategies learnt in the group. When asking about the length of the group, the mean show that the patients thought it was “just right”.

Patients’ feedback was collected in 2 open-ended questions in order to further improve group content and delivery. Feedback is summarised in Table 2. Due to the amounts of qualitative data, we have provided main themes and some illustrative examples from the patients’ responses on the open-ended questions.

Table 2

Discussion:

Perfectionism is one of the core features in patients with eating disorders and maladaptive aspects of perfectionism are serious barriers in the recovery journey, particularly for severe patients in inpatient treatment programmes. There are a variety of interventions and systematic approaches but evaluation of therapeutic groups for perfectionism is lacking in the literature (Sparrow & Tchanturia 2016). In our previous published study (Lloyd, Fleming, & Tchanturia, 2015; Lloyd, Fleming, et al., 2014) we evaluated a CBT based group where we found positive feedback and potential benefits of the perfectionism group intervention. We made the revised group protocol more action based in addition to the psychoeducational programme.

Results from this study replicated most of the previous findings demonstrating the feasibility of this approach and indicating that the group perfectionism intervention significantly improves the patients’ self-reported perfectionism. Similar to previous

perfectionism groups in AN (Lloyd et al., 2015; Lloyd, Fleming, et al., 2014) the personal standard and concern over mistakes dimensions of perfectionism were significantly reduced after the group evaluation. The results suggest that the high level of standards were reduced as well as the excessive importance placed on these for self-evaluation. In addition, patients reported less negative reactions to mistakes after completing the group. A significant reduction was also found in the participants CPQ and FMPS total score. These findings are encouraging given that patients with AN often have difficulties with their perfectionist standards (Bardone-Cone et al., 2007), which is thought to contribute to the maintenance of the disorder (Treasure & Schmidt, 2013) and to impede the treatment outcome (Bizeul et al., 2001; Sutandar-Pinnock et al., 2003).

It is important to note that the participants included in the current study had higher scores on the baseline FMP scale compared to previous research and similar to Lloyd and colleagues (2014) (see Table 3, supplementary material). This could be explained by the fact that patients in inpatient programmes, where both studies were conducted, are more severe and have higher chronicity than the mixed patient samples reported in the published studies outlined in Table 3. One of the problems delivering psychological treatment in an inpatient setting is that group interventions are offered immediately after admission, thus patients are often in a nutritionally compromised state which makes it very difficult for them to engage in psychoeducational groups. Consequently we further developed the perfectionism group to make it rich with concrete and creative materials, vignettes, games and drawing exercises to engage patients in the activities and to provide a motivated environment in the group sessions. In terms of outcome measures, in addition to the FMP scale we have used

the CPQ, a short 12-item measure which has been found to be sensitive to change according to a previous study (Lloyd et al., 2015) and the results of the current study.

In addition to self-reported improvements in various aspects of perfectionism, the positive feedback elicited from patients on the feedback questionnaires (see Table 2) highlights the acceptability of the treatment. Several group members highlighted that they found the interactive group content helpful, by mixing information, discussions and practical activities. One patient mentioned that activities were a good way to generate ideas and allowing the patients to identify their traits, which are important aspects of why we decided to include more practical activities in the group. Many patients also mentioned that they gained some form of self-awareness during the group. This is in line with previous qualitative studies which have reported that patients found the group beneficial in enabling them to gain an awareness of their perfectionism and starting to challenge perfectionist thoughts and behaviours, as well as recognising the negative impact of the trait (Larsson et al., in preparation; Sparrow & Tchanturia, 2016).

Participants also reported finding the group setting useful; group members reflected on the benefits of the group setting by highlighting the advantages of discussions, sharing and reassurance between group members. This is in line with previous research, highlighting the benefits of group interventions with patients with eating disorders (Moreno, 1994) and suggesting that psychological interventions in a group format can bring unique benefits that are not achievable when working with patients individually (Lloyd et al., 2015; Lloyd, Fleming, et al., 2014; Tchanturia, 2015; Yalom, 2005). Half of the patients expressed it would have been helpful to have more

sessions to allow more time for change; others suggested smaller sessions with fewer number of patients or more practical activities. These are all valuable suggestions for the group, however due to the nature of the inpatient ward (other therapy offered, funding, admission/discharge dates) we have been finding 6 sessions, with a mean attendance of 5 participants per session, sufficient in reducing the participants' maladaptive perfectionism with a small to medium effect size. Further studies evaluating treatment lengths and group sizes would be needed to further appraise the group protocol.

Another aspect worth mentioning is the improved drop out rates (18%) from previous studies (50%; Lloyd, Fleming, et al., 2014). This could be explained by the revised protocol trying to engage patients more successfully. These findings are encouraging given that poor treatment engagement is a common problem in existing psychological therapies for AN (NICE, 2004); it is difficult to keep patients engaged in treatment and many fail to complete all sessions (Dejong, Broadbent, & Schmidt, 2012; Waller et al., 2009).

Previous research has indicated a high impairment in the social leisure domain of the disorder (Tchanturia et al., 2013), with individuals reporting difficulties making social contacts (Doris, Westwood, Mandy, & Tchanturia, 2014; Krug et al., 2013) and high levels of social anhedonia (Harrison, Mountford, & Tchanturia, 2014; Tchanturia et al., 2012) often leading to difficulties with treatment engagement. Thus, it is encouraging to note that the perfectionism group helps patients not only with their maladaptive perfectionism but also social interactions.

This study has a number of limitations worth addressing in future studies. One of the main limitations is the absence of a control condition. It is also important to note the severity of the patient group as the efficacy of interventions is challenged when patients are severely underweight. It would be useful to look at the long-term effect of the intervention with patients with low BMI, as well as the efficacy of the intervention in a less severe sample. It is also worth mentioning that all patients who took part in the perfectionism groups also received other clinical input during the same time, including individual therapy and other therapeutic groups.

Despite these limitations, the perfectionism group intervention has been found effective for patients with AN and results indicate a reduction in overall perfectionism. The findings are in line with a systematic review of the literature that have shown a cognitive behavioural approach to be effective in reducing perfectionism in individuals with a range of disorders and/or with clinical levels of perfectionism (Lloyd, Schmidt, et al., 2014). Our study demonstrates benefits for patients with AN after completing the brief intervention in an inpatient programme.

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For Review Only

References:

- Bardone-Cone, A. M., Wonderlich, S. A., Frost, R. O., Bulik, C. M., Mitchell, J. E., Uppala, S., & Simonich, H. (2007). Perfectionism and eating disorders: current status and future directions. *Clinical Psychology Review, 27*(3), 384–405. doi:10.1016/j.cpr.2006.12.005
- Bastiani, A. M., Rao, R., Weltzin, T., & Kaye, W. H. (1995). Perfectionism in anorexia nervosa. *The International Journal of Eating Disorders, 17*(2), 147–52.
- Bento, C., Pereira, A. T., Maia, B., Marques, M., Soares, M. J., Bos, S., ... Macedo, A. (2010). Perfectionism and eating behaviour in Portuguese adolescents. *European Eating Disorders Review : The Journal of the Eating Disorders Association, 18*(4), 328–37. doi:10.1002/erv.981
- Bizeul, C., Sadowsky, N., & Rigaud, D. (2001). The prognostic value of initial EDI scores in anorexia nervosa patients: a prospective follow-up study of 5–10 years. *European Psychiatry, 16*(4), 232–238. doi:10.1016/S0924-9338(01)00570-3
- Centre for Clinical Interventions. (2002). Overcoming perfectionism. Retrieved September 1, 2012, from <http://www.cci.health.wa.gov.au/>
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. L. Erlbaum Associates.
- Davies, H., Campbell, I. C., & Tchanturia, K. (2009). Multidimensional self reports as a measure of characteristics in people with eating disorders. *Weight and Eating Disorders., 14*, 84–91.
- Dejong, H., Broadbent, H., & Schmidt, U. (2012). A systematic review of dropout from treatment in outpatients with anorexia nervosa. *The International Journal of Eating Disorders, 45*(5), 635–47. doi:10.1002/eat.20956
- Doris, E., Westwood, H., Mandy, W., & Tchanturia, K. (2014). A Qualitative Study of Friendship in Patients with Anorexia Nervosa and Possible Autism Spectrum Disorder. *Psychology, 5*, 1338–1349.
- Egan, S. J., Shafran, R., Lee, M., Fairburn, C. G., Cooper, Z., Doll, H. A., ... Watson, H. J. (2016). The Reliability and Validity of the Clinical Perfectionism Questionnaire in Eating Disorder and Community Samples. *Behavioural and Cognitive Psychotherapy, 44*(1), 79–91. doi:10.1017/S1352465814000629
- Egan, S. J., Wade, T. D., & Shafran, R. (2011). Perfectionism as a transdiagnostic process: a clinical review. *Clinical Psychology Review, 31*(2), 203–12. doi:10.1016/j.cpr.2010.04.009

- Franco, K., Díaz, F., Torres, P., Telléz, Y., & Hidalgo-Rasmussen, C. (2014). Internal consistency, test-retest reliability and construct validity of the Frost Multidimensional Perfectionism Scale. *Revista Mexicana de Trastornos Alimentarios*, 5(2), 91–97. doi:10.1016/S2007-1523(14)72004-X
- Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research*, 14(5), 449–468. doi:10.1007/BF01172967
- Goldstein, M., Peters, L., Thornton, C. E., & Touyz, S. W. (2014). The Treatment of Perfectionism within the Eating Disorders: A Pilot Study. *European Eating Disorders Review*, 22(3), 217–221. doi:10.1002/erv.2281
- Halmi, K. A., Sunday, S. R., Strober, M., Kaplan, A., Woodside, D. B., Fichter, M., ... Kaye, W. H. (2000). Perfectionism in anorexia nervosa: variation by clinical subtype, obsessionality, and pathological eating behavior. *The American Journal of Psychiatry*, 157(11), 1799–805. doi:10.1176/appi.ajp.157.11.1799
- Harrison, A., Mountford, V., & Tchanturia, K. (2014). Social anhedonia and work and social functioning in the acute and recovered phases of eating disorders. *Psychiatry Research*, 218(1-2), 187–194. doi:10.1016/j.psychres.2014.04.007
- Kaye, W. H., Bulik, C. M., Thornton, L., Barbarich, N., & Masters, K. (2004). Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *The American Journal of Psychiatry*, 161(12), 2215–21. doi:10.1176/appi.ajp.161.12.2215
- Keski-Rahkonen, A., Raevuori, A., Bulik, C. M., Hoek, H. W., Rissanen, A., & Kaprio, J. (2014). Factors associated with recovery from anorexia nervosa: a population-based study. *The International Journal of Eating Disorders*, 47(2), 117–23. doi:10.1002/eat.22168
- Krug, I., Penelo, E., Fernandez-Aranda, F., Anderluh, M., Bellodi, L., Cellini, E., ... Treasure, J. (2013). Low social interactions in eating disorder patients in childhood and adulthood: a multi-centre European case control study. *Journal of Health Psychology*, 18(1), 26–37. doi:10.1177/1359105311435946
- Larsson, E., Lloyd, S., Westwood, H., & Tchanturia, K. (submitted). Participants feedback on a brief perfectionism group intervention in Anorexia Nervosa: A qualitative study. *Submitted for publication*.
- Lloyd, S., Fleming, C., Schmidt, U., & Tchanturia, K. (2014). Targeting Perfectionism in Anorexia Nervosa Using a Group-Based Cognitive Behavioural

- Approach: A Pilot Study. *European Eating Disorders Review*, 22(5), 366–372.
doi:10.1002/erv.2313
- Lloyd, S., Fleming, C., & Tchanturia, K. (2015). Perfectionism short format group for inpatients. In K. Tchanturia (Ed.), *Brief Group Psychotherapy for Eating Disorders: Inpatient Protocols* (pp. 107–121). Routledge Mental Health.
- Lloyd, S., Schmidt, U., Khondoker, M., & Tchanturia, K. (2014). Can Psychological Interventions Reduce Perfectionism? A Systematic Review and Meta-analysis. *Behavioural and Cognitive Psychotherapy*, 43(06), 705–731.
doi:10.1017/S1352465814000162
- Lloyd, S., Yiend, J., Schmidt, U., & Tchanturia, K. (2014). Perfectionism in anorexia nervosa: novel performance based evidence. *PloS One*, 9(10), e111697.
doi:10.1371/journal.pone.0111697
- Moreno, J. K. (1994). Group treatment for eating disorders. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of Group Psychotherapy: An Empirical and Clinical Synthesis* (pp. 416–457). New York: John Wiley & Sons.
- NICE. (2004). *Eating disorders: Core interventions in the treatment and management of anorexia nervosa, bulimia nervosa and related eating disorders* (NICE clini.). NICE. Retrieved from <https://www.nice.org.uk/guidance/cg9>
- Riley, C., Lee, M., Cooper, Z., Fairburn, C. G., & Shafran, R. (2007). A randomised controlled trial of cognitive-behaviour therapy for clinical perfectionism: a preliminary study. *Behaviour Research and Therapy*, 45(9), 2221–31.
doi:10.1016/j.brat.2006.12.003
- Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: a cognitive-behavioural analysis. *Behaviour Research and Therapy*, 40(7), 773–791. doi:10.1016/S0005-7967(01)00059-6
- Shafran, R., & Mansell, W. (2001). Perfectionism and psychopathology: a review of research and treatment. *Clinical Psychology Review*, 21(6), 879–906.
doi:10.1016/S0272-7358(00)00072-6
- Sparrow, K., & Tchanturia K (2016) Inpatient brief group therapy for anorexia nervosa: Patient experience. *International Journal of Group Psychotherapy*
doi:10.1080/00207284.2016.1156406
- Srinivasagam, N. M., Kaye, W. H., Plotnicov, K. H., Greeno, C., Weltzin, T. E., & Rao, R. (1995). Persistent perfectionism, symmetry, and exactness after long-term recovery from anorexia nervosa. *The American Journal of Psychiatry*,

- 52(11), 1630–4. doi:10.1176/ajp.152.11.1630
- Steele, A. L., & Wade, T. D. (2008). A randomised trial investigating guided self-help to reduce perfectionism and its impact on bulimia nervosa: A pilot study. *Behaviour Research and Therapy*, *46*(12), 1316–1323. doi:10.1016/j.brat.2008.09.006
- Steele, A. L., Waite, S., Egan, S. J., Finnigan, J., Handley, A., & Wade, T. D. (2013). Psycho-education and group cognitive-behavioural therapy for clinical perfectionism: a case-series evaluation. *Behavioural and Cognitive Psychotherapy*, *41*(2), 129–43. doi:10.1017/S1352465812000628
- Sutandar-Pinnock, K., Woodside, B., Carter, J. C., Olmsted, M. P., & Kaplan, A. S. (2003). Perfectionism in anorexia nervosa: a 6-24-month follow-up study. *The International Journal of Eating Disorders*, *33*(2), 225–9. doi:10.1002/eat.10127
- Tchanturia, K., Davies, H., Harrison, A., Fox, J. R. E., Treasure, J., & Schmidt, U. (2012). Altered social hedonic processing in eating disorders. *The International Journal of Eating Disorders*, *45*(8), 962–9. doi:10.1002/eat.22032
- Tchanturia, K., Hambrook, D., Curtis, H., Jones, T., Lounes, N., Fenn, K., ... Davies, H. (2013). Work and social adjustment in patients with anorexia nervosa. *Comprehensive Psychiatry*, *54*(1), 41–45. doi:10.1016/j.comppsy.2012.03.014
- Tchanturia, K., Lounes, N., & Holttum, S. (2014). Cognitive remediation in anorexia nervosa and related conditions: a systematic review. *European Eating Disorders Review : The Journal of the Eating Disorders Association*, *22*(6), 454–62. doi:10.1002/erv.2326
- Tchanturia, K & Sparrow K. (2015). An introduction to brief group psychotherapy in intensive care programmes for eating disorders: gathering research evidence. p 1-24; In K. Tchanturia (Ed.), *Brief Group Psychotherapy for Eating Disorders: Inpatient protocols*. Routledge Mental Health.
- Treasure, J., & Schmidt, U. (2013). The cognitive-interpersonal maintenance model of anorexia nervosa revisited: a summary of the evidence for cognitive, socio-emotional and interpersonal predisposing and perpetuating factors. *Journal of Eating Disorders*, *1*(1), 13. doi:10.1186/2050-2974-1-13
- Waller, G., Schmidt, U., Treasure, J., Murray, K., Aleyna, J., Emanuelli, F., ... Yeomans, M. (2009). Problems across care pathways in specialist adult eating disorder services. *Psychiatric Bulletin*, *33*, 26–29. doi:10.1192/pb.bp.107.018325
- Yalom, I. D. (2005). *The Theory and Practice of Group Psychotherapy*. New York:

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Table 1. Outcome variables at time one and time two

| Variable | N (%) | T1 | T2 | t | p-value | Effect size (d) |
|-----------------------------|----------|--------------|--------------|-----|---------|-----------------|
| F-MPS total | 29 (100) | 112.0 (23.3) | 106.0 (19.4) | 2.6 | 0.01** | 0.3 |
| F-MPS Personal Standards | 29 (100) | 30.2 (4.6) | 28.9 (4.2) | 2.2 | 0.04* | 0.3 |
| F-MPS Concern over Mistakes | 29 (100) | 36.7 (8.8) | 34.1 (8.0) | 2.3 | 0.03* | 0.3 |
| F-MPS Doubts about Actions | 29 (100) | 16.4 (3.6) | 16.1 (2.7) | 0.6 | 0.56 | 0.1 |
| CPQ | 29 (100) | 34.7 (7.4) | 31.9 (7.2) | 3.0 | 0.005** | 0.4 |
| BMI | 29 (100) | 15.4 (2.2) | 16.1 (2.2) | 3.3 | 0.002** | 0.3 |

**=Significant at .01. *=Significant at .05.

N= number of the participants; FMPS= Frost Multi-dimensional Perfectionism Scale; CPQ= the Clinical Perfectionism Questionnaire; BMI = Body Mass Index

Table 2. Qualitative themes relating to perceived benefits and suggested improvements of the group (feedback questionnaire)

| Theme | Description | Example quotes |
|-------------------------------|---|--|
| Content of the group | Several group members expressed that they found the content of the group helpful, by mixing information and practical activities. | <p>‘I liked the delivery & the combination of theory, discussion and practical ‘experiments’’</p> <p>‘Activities were good ways to generate ideas and acknowledge our traits’</p> <p>‘The interactive games and reflecting on them, by using real life examples’</p> |
| Self-reflection | Many patients mentioned that they gained some form of self awareness during the group; by being more aware of their perfectionist behaviours or recognising the impact of their perfectionism | <p>‘Noticing my patterns of thinking’</p> <p>‘An opportunity to reflect on how perfectionist traits apply to us as individuals, and their impact on our daily life’</p> |
| Benefits of the group setting | Group members reflected on the benefits of the group setting by highlighting the advantages of discussions, sharing and reassurance between group members. | <p>‘Good group dynamics allowed for useful discussions’</p> <p>‘Working with others’</p> <p>‘Input from others’</p> |
| Improvements | Group members suggested various forms of improvements to improve the group further. | <p>‘I would be happy for the group to be longer, to allow more time for change’</p> <p>‘More interactive activities’</p> <p>‘Possibly more sessions, as it felt like we’d only just begun to breach topics - only to shortly abandon them to move onto the next session’</p> |

Table 3. Frost Multidimensional Perfectionism Scale scores in published studies

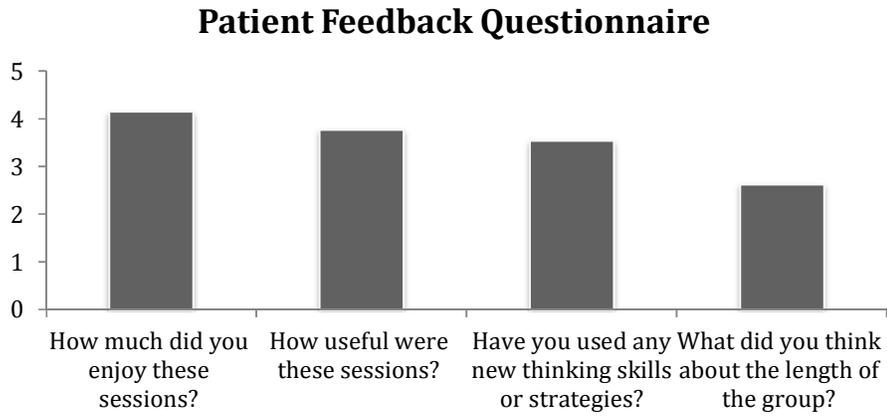
| Study | Design | Group | N | Frost Multidimensional Perfectionism Scale | | | |
|--|-------------------|-----------------------------------|-----|--|----------------------------|----------------------------|----------------------------|
| | | | | Total | Personal Standard | Concern over mistakes | Doubts about actions |
| Lloyd, Fleming, et al., (2014) | Case series | AN - IP | 21 | 133.81 (21.58) | 30.00 (3.92) | 35.10 (7.70) | 15.63 (3.50) |
| Davies, Campbell, & Tchanturia, (2009) | Case-control | Mixed AN –community,IP,OP | 30 | 95.9 (28.7) | 22.0 (5.6) | 26.1 (8.0) | 10.8 (2.5) |
| Bardone-Cone et al. (2007) | Systematic review | see studies included below | | | 26.8 – 28.0 | 31.8 – 34.8 | |
| Kaye, Bulik, Thornton, Barbarich, & Masters (2004) | | Remitted ED | 82 | 83.39 (24.15) | | | |
| | | Active ED | 160 | 85.81 (22.39) | | | |
| | | Remitted ED + anxiety disorder | 111 | 94.67 (22.92) | | | |
| | | Active ED + anxiety disorder | 310 | 96.73 (23.64) | | | |
| Halmi et al. (2000) | Case-control | AN/R | 145 | 97.38 (1.95 ^a) | 27.60 (0.54 ^a) | 31.81 (0.80 ^a) | 12.86 (0.33 ^a) |
| | | AN/P | 116 | 100.99 (2.13 ^a) | 26.77 (0.59 ^a) | 32.78 (0.83 ^a) | 13.83 (0.36 ^a) |
| | | AN/BP | 59 | 102.29 (2.53 ^a) | 27.63 (0.59 ^a) | 34.00 (1.07 ^a) | 13.57 (0.47 ^a) |
| Bastiani, Rao, Weltzin, & Kaye (1995) | Case-control | AN | 11 | 96 | 28 | 34 | 14 |
| | | AN/WR | 8 | 85 | 27 | 27 | 10 |
| Srinivasagam et al (1995) | Case-control | AN/REC | 20 | 95 (23) | 27 (4) | 29 (10) | 11 (5) |

Means (Standard deviations). ^a = standard error

AN/R = restrictive AN; AN/P = AN purging; AN/BP = AN binge-purge; AN/WR = AN weight restored; AN/REC = AN recovered; IP = inpatients; OP = outpatients.

Note: Clinical threshold for total FMPS is 84. The highest scores in total perfectionism are reported in the current and Lloyd et al.'s 2014 study where data was collected from IP with AN.

Figure 1. Mean scores on the feedback questionnaire given after the final session.



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