

We found no evidence that different talking therapies had different effects on various thinking styles in depressed adolescents; nor that changes in these thinking styles reduced symptoms.

INTRODUCTION

- Talking treatments such as cognitive behavioural therapy (CBT) and short-term psychoanalytic psychotherapy (STPP) are effective at treating depression in adolescents, but we don't know why (Weersing et al. 2017), nor whether mechanisms are specific or non-specific (Asarnow & Ougrin, 2017).
- We investigated whether cognitive styles mediate the effects of talking treatments: dependency as a candidate mediator for STPP (Blagys & Hilsenroth, 2000); distraction and rumination as candidate mediators for CBT (Spinoven et al., 2018).

METHODS

- Participants were 465 adolescents (75% female) with DSM-IV unipolar major depressive disorder from a multicentre, pragmatic, randomised controlled trial (IMPACT; Goodyer et al., 2017). Moderately to severely depressed 11- to 17-year olds in NHS specialist clinics were randomised to CBT, STPP, or brief psychological intervention (BPI).
- Participants were assessed at baseline and on 5 occasions in the following 86 weeks. We used self-report measures of depressive symptoms (Mood and Feelings Questionnaire), dependency (Depressive Experiences Scale for Adolescents, measured at 0, 52 and 86 weeks only), and rumination and distraction (Ruminative Responses Scale).
- We imputed missing data. Using longitudinal linear mixed-effects regression analysis with maximum likelihood estimation and subject level random intercept and slope, we analysed (1) the differential effects of the three treatments on cognitive styles; (2) whether changes in cognitive styles were associated with subsequent changes in depressive symptoms.

RESULTS

- The trajectories of dependency at each assessment did not differ in the STPP group compared with other groups ($p=.497$; $p=.769$). The trajectories of distraction and rumination at each assessment did not differ in the CBT group compared with other groups (distraction: $p=.250$, $p=.608$; rumination: $p=.685$, $p=.628$).
- Change in depressive symptoms from 52-86 weeks was not predicted by change in dependency between baseline and 52 weeks ($p=.118$).
- Changes in depressive symptoms in inter-assessment intervals were not predicted by changes in rumination or distraction in previous inter-assessment intervals (distraction: $p=.770$; rumination: $p=.663$).
- We did not extend to a planned mediation analysis due to above negative results.

DISCUSSION

- CBT, STPP, and BPI showed no differential effect on dependency, distraction, and rumination in depressed adolescents.
- Changes in these cognitive styles were not associated with subsequent changes in depressive symptoms across all treatment groups.
- In summary, we found no evidence that the treatments have specific effects on dependency, distraction, and rumination; and, no evidence that the treatments reduce symptoms through a non-treatment-specific effect on these cognitive styles.
- It is possible that the assessments may not have been frequent enough to demonstrate effects of changes in cognitive styles on depressive symptoms: if the interval between improvement and cognitive styles is short, then a similarly short assessment interval would be needed to demonstrate this mechanism.

	Effect	95% CI	p	n (subject, obs.)
DEQ dependency				
Time - treatment interaction				
CBT v BPI	0.6	-4.1 x10 ⁻³ to 2.6 x10 ⁻³	0.7	(309, 927)
STPP v (CBT + BPI)	1.0 x10 ⁻³	-1.9 x10 ⁻³ to 4.0 x10 ⁻³	0.5	(465, 1395)
Time-squared - treatment interaction				
CBT v BPI	-4.9 x10 ⁻⁶	-2.0 x10 ⁻⁵ to 1.0 x10 ⁻⁵	0.5	(309, 927)
STPP v (CBT + BPI)	1.9 x10 ⁻⁶	-1.1 x10 ⁻⁵ to 1.5 x10 ⁻⁵	0.8	(465, 1395)
RRS distraction				
Time - treatment interaction				
STPP v BPI	2.2 x10 ⁻⁴	-3.1 x10 ⁻⁵ to 2.6 x10 ⁻³	0.9	(311, 1866)
CBT v (STPP + BPI)	1.5 x10 ⁻³	-1.0 x10 ⁻³ to 4.0 x10 ⁻³	0.3	(465, 2790)
Time-squared - treatment interaction				
STPP v BPI	4.0 x10 ⁻⁶	-8.0 x10 ⁻⁶ to 1.6 x10 ⁻⁵	0.5	(311, 1866)
CBT v (STPP + BPI)	2.7 x10 ⁻⁶	-7.6 x10 ⁻⁶ to 1.3 x10 ⁻⁵	0.6	(465, 2790)
RRS rumination				
Time - treatment interaction				
STPP v BPI	2.6 x10 ⁻³	-3.1 x10 ⁻³ to 8.3 x10 ⁻³	0.4	(311, 1866)
CBT v (STPP + BPI)	1.1 x10 ⁻³	-4.1 x10 ⁻³ to 6.3 x10 ⁻³	0.7	(465, 2790)
Time-squared - treatment interaction				
STPP v BPI	-3.5 x10 ⁻⁶	-2.7 x10 ⁻⁵ to 2.0 x10 ⁻⁵	0.8	(311, 1866)
CBT v (STPP + BPI)	-5.2 x10 ⁻⁶	-2.6 x10 ⁻⁵ to 1.6 x10 ⁻⁵	0.6	(465, 2790)

TABLE 1: EFFECT OF TREATMENT GROUP ON COGNITIVE STYLES

- Longitudinal mixed effects model estimates of the treatment effect on dependency, distraction, and rumination.
- Missing values were imputed and analysis performed using m=50 imputations.
- The model was based on imputed data for 424 (91%) or 450 (97%) of 465 patients who provided one or more self-reported cognitive style scores over the baseline, 6, 12, 36, 52, or 86 week assessment points.
- Analyses controlled for time between randomisation and start of treatment, gender, ethnicity, region, and depressive symptom scores (MFQ) at baseline.

	Effect	95% CI	p	n (subject, obs.)
MFQ				
Prior change in cognitive style main effect				
DEQ dependency	0.6	-0.2 to 1.4	0.1	(371, 371)
RRS distraction	-1.6 x10 ⁻²	-0.1 to 0.1	0.8	(465, 1669)
RRS rumination	1.1 x10 ⁻²	-3.9 x10 ⁻² to 6.2 x10 ⁻²	0.7	(465, 1669)

TABLE 2: EFFECT OF COGNITIVE STYLES ON DEPRESSIVE SYMPTOMS

- Longitudinal mixed effects model estimates of the change in cognitive style effect over one inter-assessment interval on change in depressive symptoms at the next inter-assessment interval.
- Missing values were imputed and analysis performed using m=50 imputations.
- The model was based on imputed data for 371 (80%) or 465 (100%) of 465 patients who provided three or more self-reported cognitive style scores over the baseline, 6, 12, 36, 52, or 86 week assessment points.
- Analyses controlled for time between randomisation and start of treatment, gender, ethnicity, and region.

BPI = brief psychological intervention. CBT = cognitive behavioural therapy. STPP = short-term psychoanalytical psychotherapy. DEQ = depressive experiences questionnaire. RRS = ruminative response scale. MFQ = moods and feelings questionnaire.

