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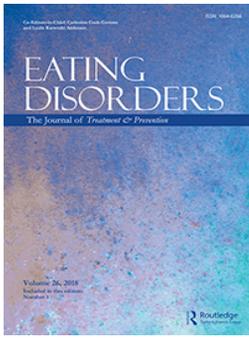
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Is reduction of symptoms in eating disorder patients after 1 year of treatment related to attachment security and mentalization?

Greet S. Kuipers^a, Zara van Loenhout^a, L. Andries van der Ark^b, and Marrie H.J. Bekker^c

^aUnit for Eating Disorders, GGZ Breburg, Tilburg, The Netherlands; ^bResearch Institute of Child Development and Education, University of Amsterdam, Amsterdam, The Netherlands; ^cDepartment of Medical and Clinical Psychology, Tilburg University, Tilburg, The Netherlands

ABSTRACT

In a sample of 38 eating disorder (ED) patients who received psychotherapeutic treatment, changes in attachment security, and mentalization in relation to symptoms reduction were investigated. Attachment security improved in 1 year but was unrelated to improvement of ED or comorbid symptoms. Mentalization did not change significantly in 1 year. Pretreatment mentalization was negatively related to the severity of ED symptoms, trait anxiety, psycho-neuroticism, and self-injurious behavior after 1 year of treatment. We conclude that for ED patients, improving mentalization might increase the effect of treatment on core and comorbid symptoms.

Introduction

Attachment style is defined as the internal pattern of relational expectations, emotions, and behaviors with regard to attachment, based on a particular history of attachment experiences. Insecure attachment styles are either characterized by anxiety or by avoidance or by an extreme combination of both (Crowell, Fraley, & Shaver, 2008). Attachment insecurity is highly prevalent in eating disorder (ED) patients (e.g., Ward, Ramsay, & Treasure, 2000), and it may affect treatment outcome of both ED symptoms and comorbid symptoms (e.g., Illing, Tasca, Balfour, & Bissada, 2010; Keating, Tasca, & Bissada, 2014).

Mentalization is positively related to attachment security (Fonagy, Target, Steele, & Steele, 1998) and defined as “the mental process by which an individual implicitly and explicitly interprets the actions of himself and others as meaningful on the basis of intentional mental states such as personal desires, needs, feelings, beliefs and reasons” (Bateman & Fonagy, 2004, p. 21). Compared to healthy controls, on average, patients with anorexia nervosa (AN) and a subgroup of patients with bulimia nervosa (BN) have a lower level of mentalization (Kuipers &

CONTACT Greet S. Kuipers  g.kuipers@ggzbreburg.nl  GGZ Breburg, Unit for Eating Disorders, P.O. Box 770, 5000 AT, Tilburg, The Netherlands.

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Bekker, 2012). Skårderud and Fonagy (2012) argued that low mentalization might explain ED symptoms' concrete nature: dieting or purging as physical means for dealing with negative thoughts and emotions. Kuipers, Van Loenhout, Van der Ark, and Bekker (2016) found no correlation between mentalization and symptom severity in patients with AN or BN, but Rothschild-Yakar, Levy-Shiff, Fridman-Balaban, Gur, and Stein (2010) found an interaction effect of perceived quality of the relation with the parents and mentalization on symptoms in patients with AN. In a study on women with binge-eating disorder (BED), pretreatment mentalization positively related to reduction of binge-eating symptoms after group psychotherapy (Maxwell et al., 2017).

Attachment security and mentalization may improve during treatment, affecting the course of EDs and comorbid symptoms. For example, group therapy for women with BED improved mentalization (Maxwell et al., 2017). Patients with borderline personality disorder (PD), frequently comorbid with EDs (O'Brien & Vincent, 2003), improved on attachment security as well as mentalization in 1 year of individual psychotherapy (Levy et al., 2006). In adolescents treated with mentalization-based therapy (MBT), reduction of self-injurious behavior (SIB) was related to improvement of attachment security and mentalization (Rossouw & Fonagy, 2012).

We tested three sets of expectations pertaining to ED patients who have received 1 year of psychotherapeutic treatment. First, we expected an increase of attachment security and mentalization and a decrease of ED and comorbid symptoms (Hypothesis 1). Common comorbidity was examined: depression, anxiety, PD, psycho-neuroticism, and SIB (e.g., O'Brien & Vincent, 2003). Next, we expected positive relations among change in attachment security, change in mentalization, and reduction of ED and comorbid symptoms (Hypothesis 2). Finally, we expected pretreatment levels of attachment security and mentalization to be positively related to reduction of symptoms (Hypothesis 3). A novelty of the present study is that the Adult Attachment Interview (AAI; George, Kaplan, & Main, 1996) was administered twice to the same sample of patients with AN and BN, to measure change in attachment security and mentalization.

Method

Sample

We followed 38¹ young female patients with an ED $M = 22.2$ years, $SD = 3.5$; 46% had at least a college degree, 71.0% of patients had AN, 10.5% had BN, 18.5%

¹Originally, the sample consisted of 50 patients. Twelve patients were unavailable at T_1 due to death (1), refusal to participate (8), data lost (1), and change of address (2). The dropouts were older ($M = 28.7$ years, $SD = 11.4$; $p = .003$ *) than the completers but did not significantly differ from the completers on any other variable measured in the study.

had a form of AN or BN that did not completely fulfill the DSM-IV criteria, 97% had at least one PD, and 29% reported SIB in the previous month) from the start of a 4–5-day/week program in one of two Dutch ED treatment centers (T_0) to 1 year afterward (T_1). The treatment program consisted of group and individual psychotherapy, meals, support and advice, art therapy, and psychomotor therapy, aiming to normalize eating behavior and weight, to improve mentalization, emotion regulation, body satisfaction, and social skills. Psychotherapy focused on intra- and interpersonal functioning; in one of the centers, MBT was the method applied. Treatment groups changed over time because patients started treatment and were discharged on a regular basis. On average, inpatient group treatment lasted 6 months followed by individual outpatient psychodynamic psychotherapy.

Measurements

Both at T_0 and T_1 , we measured attachment security, mentalization, ED symptoms, and comorbid symptoms. For details and references, we refer to Kuipers et al. (2016). Attachment security was measured using the Coherence of Mind scale and mentalization was measured using the Reflective Function Scale (RFS), which are both scored using the verbatim text of the AAI. In addition, patients were also classified as either secure or insecure regarding attachment and, using RFS score 3 as cutoff point, either as having a low level or a high level of mentalization. For three ED symptoms (drive for thinness, bulimia, and body dissatisfaction), the level of severity was measured using the Eating Disorder Inventory-II. ED and depression were diagnosed using the Structured Clinical Interview for DSM Axis I disorders (SCID-I), state anxiety and trait anxiety were measured using the State Trait Anxiety Inventory, psycho-neuroticism was measured using the Symptom Checklist-90, PD was assessed using the SCID-II, and SIB was assessed with the Self-injury Questionnaire-Treatment related.

Statistical analysis

First, we compared the mean scores on attachment, mentalization, and severity of ED and comorbid symptoms at T_0 and T_1 (Hypothesis 1) using paired-sample *t*-tests. Cohen's *d* was used as effect size. For categorical outcomes (PD and SIB), we used McNemar's tests. Second, we investigated the correlations among change in attachment, change in mentalization, and change in ED and comorbid symptoms (Hypothesis 2) using product-moment correlations. Third, we compared symptom severity at T_1 between the secure and insecure groups with regard to attachment (established at T_0) and between the low and high mentalization group (established at T_0) using independent-sample *t*-tests (hypothesis 3). To control for multiple testing in

each hypothesis, we set the *false discovery rate* (Benjamini & Hochberg, 1995) equal to .05. This procedure yields a different alpha level for each statistical test, so *p* values cannot be readily interpreted for significance. Significant results are marked with an asterisk. All data were analyzed using SPSS.

Results

Hypothesis 1

As hypothesized, the mean score on attachment security increased significantly, but the expected increase in mentalization was not confirmed (Table 1). All three ED symptoms decreased significantly after 1 year of treatment. Twenty-eight percent of the patients fully recovered (not tabulated). Comorbid depression, anxiety, and psycho-neuroticism improved; PD (not tabulated) and SIB (not tabulated) did not change.

Hypothesis 2

As hypothesized, a change in attachment security was positively related to change in mentalization ($r = .36$, $p = .013 *$), but contrary to our expectations, changes in attachment security or mentalization were neither related to changes in ED symptoms nor to changes in comorbidity (not tabulated). Furthermore, changes in ED symptoms were correlated to changes in several comorbid symptoms (Table 2).

Hypothesis 3

At T_0 , 12 patients (32%) were classified as secure with regard to attachment and 26 patients (68%) as insecure regarding attachment. Both at T_0 and T_1 , contrary to our expectations, we found no differences in mean ED symptoms

Table 1. Mean change in attachment security, mentalization, ED, and comorbid symptoms between T_0 and T_1 .

Trait	T_0		T_1		$t(37)$	p	d
	M	SD	M	SD			
Attachment sec.	3.60	2.39	4.46	2.25	2.28	.029 *	.37
Mentalization	2.71	1.50	2.87	1.51	.85	.403	
Drive for thinness	35.45	5.44	30.68	9.40	- 3.25	.002 *	- .57
Bulimia	17.53	8.70	14.74	7.10	- 3.17	.003 *	- .54
Body dissatisfaction	46.87	7.19	41.74	11.03	- 3.34	.002 *	- .58
Depression	1.58	1.29	.89	1.16	- 2.64	.012 *	- .43
State anxiety	58.89	11.08	53.76	12.56	- 2.36	.024 *	- .38
Trait anxiety	63.08	8.10	57.11	11.71	- 3.43	.002 *	- .58
Psycho-neuroticism	241.45	50.67	208.50	56.67	- 3.79	.001 *	- .62

*Significant *p* value. T_0 : At the start of the treatment; T_1 : after 1 year; *d*: effect size Cohen's *d* (omitted when effect is ns); Attachment sec.: attachment security.

Table 2. Correlations between change in ED symptoms and change in comorbid symptoms.

	Depression	State anxiety	Trait anxiety	Psycho-neur.
Drive for thinness	.29	.43 *	.68 *	.44 *
Bulimia	.19	.34	.29	.36 *
Body dissatisfaction	.24	.44 *	.64 *	.36 *

*Significant correlation. Psycho-neur.: Psycho-neuroticism.

Table 3. Mean differences on eating disorder symptoms, trait anxiety, psycho-neuroticism between the low ($N = 31$) and high ($N = 7$) mentalization group.

Symptom at T_1	Mentalization				$t(36)$	p	d
	Low		High				
	M	SD	M	SD			
Drive for thinness	32.68	8.42	21.86	8.88	3.04	.004 *	- 1.25
Bulimia	15.26	6.92	12.43	8.02	.95	.348	
Body dissatisfaction	43.77	10.18	31.86	9.84	2.81	.008 *	- 1.19
Trait anxiety	59.55	11.44	46.29	4.96	2.98	.005 *	- 1.50
Psycho-neuroticism	221.10	51.88	152.71	43.60	3.23	.003 *	- 1.43

*Significant p value.

severity and mean comorbid symptoms severity between these two groups. At T_0 , 7 patients (18%) were classified as having a high mentalization level and 31 patients as having a low level of mentalization. At T_0 , these groups showed no differences with respect to ED or comorbid symptoms, but at T_1 , the low mentalization group had higher scores on ED symptoms, trait anxiety, and psycho-neuroticism (Table 3). In an exploratory analysis, we also found that SIB was only prevalent in the low mentalization group (35% at T_0 and 42% at T_1).

Discussion

In terms of illness duration, attachment security, mentalization, severity of comorbid anxiety, depression, and SIB, our sample was similar to other samples in inpatient ED studies, but ED symptom severity and prevalence of PDs were higher and the dropout rate (24%) was relatively low (for details, see Kuipers, Den Hollander, Van der Ark, & Bekker, 2017). For the majority of our sample, MBT was applied. The results for this subsample were no different from the results for the whole sample.

After 1 year of treatment, attachment security improved, but in contrast to earlier studies (e.g., Levy et al., 2006; Maxwell et al., 2017), mentalization did not. Besides differences in diagnosis and treatment, the lack of improvement may be due to the high prevalence of avoidant PD in our sample and the relatively short follow-up. Avoidant PD is correlated with alexithymia

(Nicolò et al., 2011) which might flaw mentalization, and in most treatment-outcome studies for ED samples, follow-up periods of 2, 5, or 10 years are common (e.g., Keel & Brown, 2010). Perhaps, a follow-up of 1 year was too short for improvement on mentalization, PDs, and SIB. Contrary to our expectations, we found no relations between changes in attachment security or mentalization and changes in ED and comorbid symptoms (Hypothesis 2). This might be due to the small sample size and short follow-up, but perhaps such direct relations do not exist (e.g., Katznelson, 2014). With respect to Hypothesis 3, we showed that mentalization predicts the reduction of ED and comorbid symptoms, whereas attachment security does not. We used the AAI to measure attachment security. Maxwell et al. (2017), who also used the AAI, also reported no effect of treatment on attachment security, whereas Illing, Tasca, Balfour, and Bissada (2010), who used a self-report measure, did find a significant relationship. The positive effect of mentalization on treatment might have to do with better emotion regulation skills and a better understanding of psychological processes. Hence, we conclude that improving mentalization may increase the effect of treatment on ED and comorbid symptoms.

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