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Innovative Moments and the Process of Change in the Treatment of Bulimia Nervosa

Iakovina Koutoufa[a], Eva Conceição[b], Inês Sousa[c], Michael Evangeli[a], Ross Crosby[d], Stephen Wonderlich[d] and Inês Mendes[a]

[a]Department of Psychology, Royal Holloway University of London, Egham, UK; [b]School of Psychology, University of Minho, Braga, Portugal; [c]Department of Mathematics, University of Minho, Braga, Portugal; [d]Sanford Center for Bio-Behavioral Research, Fargo, ND, USA

ABSTRACT

Problematic patient narratives emerging in the process of treatment have been identified as important factors in the maintenance of psychopathology, and their change is associated with desired treatment outcomes. This increased focus in psychotherapy research has triggered the investigation of innovative moments (IMs) as novelties in patient narratives in therapy. This exploratory study aims to investigate the development of IMs throughout treatment in bulimia nervosa (BN) in a sample of good and poor outcome cases, and examine their longitudinal associations with binge and purge frequency change. IMs were coded in sixty sessions across five good outcome and five poor outcome cases in different stages of treatment. Generalized estimating equation analyses indicated that IMs evolved significantly over time, with different trajectories between good and poor outcome groups. High-level IMs showed higher proportion in the good outcome group at the end of treatment indicating that the ability to elaborate on how and why change might occur (as measured by high-level IMs) plays a role in the process of change in BN. Additionally, both low- and high-level IMs predicted symptom decrease in the following session. The study provides a preliminary understanding of important patient narrative processes in psychotherapy for BN and their association with treatment change.

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In psychotherapy research there is an increased interest in the process of change, focusing on the patient narrative as a representation of the development of new meanings that enable change (Montesano et al., 2017). The relevance of narrative transformation has been highlighted in constructivist research on adaptive functioning (e.g. Pennebaker & Seagal, 1999) and in psychotherapy (e.g. Angus & Greenberg, 2011; Gonçalves & Stiles, 2011).

Inspired by White and Epston's (1990) use of the term "unique outcomes," innovative moments (IMs) are described as moments in the therapeutic dialogue that form exceptions to the patient's problematic narrative. They are assumed to constitute transtheoretical and idiographic markers of meaning transformation and change (Gonçalves,

CONTACT Iakovina Koutoufa ikoutoufa@gmail.com Department of Psychology, Royal Holloway University of London, Egham, UK.
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Ribeiro, et al., 2016). IMs are different ways of acting, feeling, thinking, and relating that are exceptions to the previously held problematic narrative, or maladaptative meanings. The elaboration of these new meanings facilitates the revision of the problematic self-narrative and increase the flexibility of meaning making across all life experiences.

Empirical research with IMs used seven different types of markers, that may be organized into two levels of change: low- and high-level (Gonçalves et al., 2017). Low-level IMs indicate a differentiation and distancing from the problematic narrative (e.g. actions to overcome the problem, new understandings of the problem, or objection to the problem and its assumptions), whereas high-level IMs are elaborations of how change occurred where patients are able to identify the contrast between the initial problem and their adaptive position and/or understand the process underlying this transformation through a metareflective stance (e.g. generalizing it into other life domains, assuming an empowered position and being more assertive with their needs; see Table 1).

IMs have been reliably identified in a variety of different therapeutic approaches including narrative therapy for depression (Fernández-Navarro et al., 2018; Gonçalves, Ribeiro, et al., 2016) and domestic violence (Matos et al., 2009); cognitive behavioral therapy (CBT) (Gonçalves, Silva, et al., 2017; Ferreira et al., 2021), client-centered therapy (CCT) (Gonçalves et al., 2012) and emotion-focused therapy (EFT) for depression (Mendes et al., 2010, 2011); grief therapy (Alves et al., 2014); and brief integrative psychotherapy from a psychodynamic perspective (Nasim et al., 2019).

It is argued that the emergence of IMs stimulates new narratives and symptomatology improvements, which in turn allows for more narrative novelties, thereby creating a virtuous cycle (Gonçalves, Ribeiro, et al., 2016). Studies have examined this by looking at the temporal relationship between IMs and symptomatic change (Gonçalves et al., 2017). Studies on narrative therapy (Fernández-Navarro et al., 2018; Gonçalves, Ribeiro, et al., 2016) and non-manualized CBT (Gonçalves, Silva, et al., 2017) found that an increase in IMs in one session predicted a decrease in symptoms in the following session. Symptom reduction in one session also predicted an increase in IMs in the following session, although to a lesser degree. However, more recently studies on online CBT for alcohol dependence, and the Unified Protocol treatment for emotional disorders (which is based on CBT principles) found the opposite relationship, where a decrease in symptoms was correlated with a subsequent increase in IMs (Ferreira et al., 2021; Gonçalves et al., 2022).

Despite the directionality of the association between IMs and distress, IMs follow a different development pattern in good outcome cases in comparison to poor outcome cases. Overall, in good outcome cases, the proportion of IMs increases over the course of treatment across therapeutic modalities. Low-level IMs are present from the start

Table 1. Low- and high-level IMs in bulimia nervosa.

IM Levels	*Example*
Low-Level: Creating distance from the problem	"Weight goes up and down, with water, eating…just like it did when I was vomiting it would go up and down, up and down. And that's normal I've learnt."
High-Level: Centered on change	"I could just take a step back and you know…think more thoroughly or tell myself to calm down, doesn't all have to get done now. L (daughter) can dress like a wild woman, it's fine, who cares, she's a kid. T: It's good enough. P: Yes, yes it's good enough."

of treatment, whereas high-level IMs increase in the middle and final stages (Batista et al., 2020; Moggia, 2019; Montesano et al., 2017). On the other hand, poor outcome cases show a different pattern, where low-level IMs are present throughout treatment without a clear progressive tendency, whereas high-level are almost absent. Empirical findings suggest that high level IMs are the features that differentiate between good and poor outcome cases (Batista et al., 2020; Montesano et al., 2017).

Narrative change in eating disorders

To our knowledge, the process of therapeutic change in BN has not been systematically studied using the IM framework. Research in BN recovery has been dominated by a rigid definition of symptom reduction, despite the highlighted importance of meaning transformation in psychotherapy outcomes (e.g., Frank & Frank, 1993; Goldfried, 1980; Gonçalves & Stiles, 2011). As with other conditions, meaning making and changes in the self-narrative are fundamental parts of therapeutic change, which highlights the importance of shifting the direction of study in BN toward therapeutic change processes. In addition, research has shown that patients with eating disorders have difficulties constructing a personal narrative over time, especially in relation to their disorder (Lang et al., 2014). Some studies have attempted to shift the focus toward a more dynamic view of recovery from eating disorders where the development of the self-narrative is a central marker of change (Garrett, 1997; Mason et al., 2022; Weaver et al., 2005). Moreover, treatment studies in BN using nomothetic outcome measures such as symptom change, have shown limited effectiveness in achieving full abstinence from BN symptoms in long-term follow-up assessments (Linardon & Wade, 2018). Novel therapies such as the Integrative Cognitive Affective Therapy (ICAT) for BN have been developed to account for this limited effectiveness, aiming to target novel change processes, such as the reduction of the distance between the different parts of the self (Wonderlich et al., 2008). In the ICAT model, it is argued that in BN there is a specific type of negative self-discrepancy that maintains the problem, that is the discrepancy between the patient's perceptions of their actual self in comparison to their evaluative standards (Wonderlich et al., 2015).

Two qualitative single-case studies have observed the development of the self-narrative in the patient relationship with their eating disorder and the process of recovery (Bell, 2013; Salvini et al., 2012). They both identified that the patient narrative moved from a rigid, eating-disordered narrative toward a more adaptive, recovery-oriented narrative. Patients assumed agency for their recovery and moved from talking more about recovery rather than the struggle to recover. Over time, this new adaptive narrative became intrinsic to the self-narrative. The development of these changes are akin to the development of IMs in good outcome cases as patients move from developing an understanding of the problem to talking about change outside of the problematic narrative (Fernández-Navarro et al., 2018).

Other case studies in narrative therapy for BN have shown that identifying moments in therapy where the patient digresses from the problematic narrative helps with moving toward recovery (Epston et al., 1995; Pedersen, 2016). However, narrative changes in adults with BN have not been studied in larger scale studies or using a reliable narrative framework nor have they been linked with symptomatology changes.

Aims

The aim of this process-outcome study was to examine change processes in BN using a transtheoretical tool to identify narrative markers of change. More specifically, the present study aimed to (a) study how IMs evolve throughout treatment in a sample of good and poor outcome cases of BN, and (b) examine the longitudinal relationship between symptomatology change and change in IMs in BN. By mapping longitudinal markers of change of patients through treatment for BN, we aim to identify facilitating or hindering processes that can impact treatment outcome. Psychotherapy is a process of change and has an important temporal dimension which is often disregarded in clinical practice and research, especially in outcome-focused approaches (Tschacher & Ramseyer, 2009). Therapists can be attuned and monitor these trajectories to better facilitate change. Therefore, understanding the patterns in different cases can improve therapist responsiveness and adaptability in emerging therapeutic contexts (Bohart & Wade, 2013).

Method

Participants

The treatment audio recordings of five good-outcome and five poor-outcome participants ($N = 10$) were selected using purposive sampling based on their recovery from bulimic symptoms. Demographic information for the 10 participants included in the study are presented in Table 2. Participants were selected from a sample of 40 adults with BN (as defined by the Diagnostic and Statistical Manual of Mental Disorders revised 4th edition or later, DSM; American Psychiatric Association, 2000, 2013) that participated in a randomized controlled trial (RCT) examining the efficacy of ICAT in treating BN in comparison to CBT (Wonderlich et al., 2014). Exclusion criteria

Table 2. Demographics for good and poor outcome groups.

		Good Outcome $n = 5$	Poor Outcome $n = 5$	Total $N = 10$
			N	
Gender	Female	4	5	9
	Male	1	0	1
Ethnicity	White Caucasian	5	5	10
Religious Affiliation	Protestant	3	2	5
	Catholic	1	1	2
	None	1	2	3
Marital Status	Single	1	4	5
	In a relationship	1	0	1
	Co-habiting	1	0	1
	Married	1	0	1
	Divorced or widowed and remarried	1	0	1
	Divorced or widowed and single	0	1	1
Education Level	University degree	2	1	3
	No university degree	3	4	7
Primary Household Role	Income earner full-time	2	2	4
	Student full-time	2	2	4
	Student part-time	0	1	1
	Homemaker	1	0	1
			Mean (SD)	
Age		27.2 (5.9)	24.2 (9.4)	25.7 (7.6)

Note. SD = standard deviation.

included pregnancy or lactation, a body mass index below 18, a diagnosis of bipolar or psychotic disorder, a current diagnosis of substance abuse disorder, acute suicidal risk, and individuals who were receiving psychotherapy. The sample consisted of nine females and one male aged between 18 and 40 years old. The groups did not differ significantly in any of the demographic variables.

Treatment

ICAT is a psychotherapeutic approach that focuses on emotion regulation, adaptive coping strategies, cognitive and behavioral patterns, such as self-discrepancy and dietary habits, and interpersonal relationships (Wonderlich et al., 2010). ICAT includes four treatment phases across 21 sessions that include (1) motivational work and identification of maintaining factors (sessions 1-3), (2) nutritional rehabilitation (sessions 4-8), (3) behavioral modifications in relation to interpersonal patterns, self-control, self-neglect, and evaluative standards that perpetuate bulimic symptoms (sessions 9-19), and (4) relapse prevention (sessions 20-21). The treatment phases and length were consistent across all participants. Treatment was delivered by two doctoral-level psychologists, who were trained in cognitive-behavioral techniques and received weekly supervision.

Measures

*Innovative moments coding system (IMCS; **Gonçalves et al., 2011, 2017**).*

The IMCS was employed to identify narrative transformations across sessions. It is a transtheoretical tool that allows researchers to detect in-session changes from the use of transcript or audio/video recordings. The outputs of the IMCS are the proportion of IMs in relation to the overall duration of a session, and IM type or level. The IMCS has shown good psychometric properties (Gonçalves et al., 2011).

Symptom recall

Written self-reports of frequency counts of purging or bingeing episodes throughout the week were collected from participants on a weekly basis at the start of their treatment session, at the end of treatment, and at 4-month follow-up. A total of both binge and purge episodes reported during the week was used in the analyses.

Eating disorder examination (EDE; Fairburn & Beglin, 2008)

The EDE measures eating disorder symptomatology including shape and weight concerns, abstinence from bulimic symptoms, and global eating disorder severity suing a structured interview methodology. Previous studies have supported the validity of the EDE (e.g. Berg et al., 2012). The EDE was used to assess reliable recovery between pretreatment and post-treatment scores during participant sampling.

Procedure

Six sessions from each participant were selected resulting in a total of 60 sessions. Two sessions from each treatment phase were randomly selected corresponding to the

beginning (phase 1 and 2 of ICAT), mid-treatment (phase 3 of ICAT), and end of treatment (phase 4 of ICAT). Using previous research (Bardone-Cone et al., 2010), good treatment outcome was defined as (a) no engagement in bingeing, purging, or compensatory behaviors in the past three months as measured at 4-month follow-up, (b) no longer meeting diagnostic criteria for BN, and (c) having reliably recovered using the reliable change index (Jacobson & Truax, 1991) as calculated from the pre-treatment and post-treatment scores on the Eating Disorder Examination (EDE; Fairburn & Beglin, 2008). Coders were trained on the IMCS using a rigorous five-step training protocol developed by the authors of the IMCS manual (Gonçalves et al., 2009). The first author (IK) coded all the audio recordings of the sample. A second independent coder (IM) rated 30% of the sample. Coders were unaware of the treatment outcome of the participant. The IMCS coding process involved: (1) a consensual definition of the facets of the patient's problematic narrative, (2) an identification of IMs and their duration in seconds, and (3) a categorization of the IM type or level (in this research we used levels, to reduce the number of variables due to small sample size). The proportion of IMs levels (low versus high-level) in each session was used for the analysis.

Statistical analyses

First, independent sample t-tests examined differences between good and poor outcome cases in terms of their symptomatology at baseline, end of treatment, and 4-month follow-up. Second, generalized estimating equations (GEE) with gamma distribution compared good and poor outcome cases on the proportion of IMs across treatment (beginning, middle, and end of treatment). Two GEE models were tested: one with low-level IMs and the second one with high-level IMs. Finally, GEE also examined the associations between the longitudinal changes of the IMs and the longitudinal changes of bulimic symptoms across the whole sample. Low- and high-level IMs were tested as predictors of bulimic symptoms, and then the reversed model was tested with bulimic symptoms predicting low- and high-level IMs. Since binge and purge frequency at the end of treatment was used to group cases into good and poor outcome, it was decided that for these analyses the sample would be grouped together to avoid an inflation of the group effects. The goodness of fit of each model was assessed using the Quasi-likelihood under Independence Model Criterion (QIC; Pan, 2001). A smaller value shows a better fit (IBM Corp., 2018).

Results

In relation to coders agreement, the average percentage agreement between coders in relation to IM proportion was 92%. Coders also achieved a 0.84 kappa, indicating a strong agreement in relation to IM type identification (Hill & Lambert, 2004).

Table 3 presents the proportion of low- and high-level IMs across treatment in both good and poor outcome groups in BN.

The good and poor outcomes groups did not differ significantly in binge and purge frequency across baseline, end-of-treatment, or at 4-month follow-up (see Table 4).

Table 3. Descriptive data for IMs.

IM Type	Good outcome			Poor outcome		
	Beginning	Middle	EOT	Beginning	Middle	EOT
	Mean (SD)	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*	*Mean (SD)*
Low-level	7.91 (3.05)	8.39 (3.95)	3.94 (3.68)	9.06 (6.58)	10.33 (7.00)	6.86 (4.68)
High-level	4.33 (8.4)	5.14 (2.49)	13.33 (8.95)	.90 (.77)	7.74 (8.28)	6.54 (3.41)

Note. IM = Innovative Moment, SD = standard deviation, EOT = End of Treatment.

Table 4. Binge and purge frequency in good and poor outcome cases.

	Good Outcome	Poor Outcome		
	Mean (SD)	*Mean (SD)*	*T*	*p*
Binge & Purge Frequency				
BL	6.00 (5.15)	15.60 (8.79)	−2.11	.068
EOT	0 (0)*	3.60 (3.78)	−2.13	.100
4mFU	0 (0)*	2.00 (2.12)	−2.11	.103

Note. 4mFU = 4-month follow-up, BL = Baseline, EOT = End of Treatment, SD = standard deviation.
*According to the defined criteria for a good outcome case in BN.

Table 5. Parameters for IM across treatment for good- and poor-outcome groups.

Predictor	B	SE	95% CI	*Wald's* χ^2	*p*
Low-level IMs					
Group	−0.56	.46	−1.45, .34	1.48	.224
Poor Outcome x Initial	.28	.20	−0.11, .67	1.98	.160
Poor Outcome x Middle	.41	.16	.09, .72	6.49	.011*
Good Outcome x Initial	.42	.49	−0.54, 1.38	.74	.391
Good Outcome x Middle	.35	.46	−0.55, 1.24	.58	.446
High-level IMs					
Group	−0.64	.30	.05, 1.24	4.46	.035*
Poor Outcome x Initial	−1.38	.36	−2.08, −0.68	14.81	<.001**
Poor Outcome x Middle	.15	.49	−0.82, 1.12	.09	.765
Good Outcome x Initial	.39	.78	−1.13, 1.91	.25	.617
Good Outcome x Middle	−0.10	.51	−2.00, .01	3.76	.053*

Note. CI = Confidence interval, SE = Standard error.
*p<.005.
**p<.001.

Aim 1: IM trajectories in good and poor outcome cases

The trajectories for low-level and high-level IMs were examined between the two outcome groups. Table 5 shows the parameter estimates for each model.

Low-level IMs trajectory developed similarly between groups (Figure 1). These IMs type show a small increase from the beginning till the middle sessions, and then a decrease toward the end of treatment. In the poor outcome group, these IMs significantly decrease from the middle till the end of treatment (p = .011). Nevertheless, there are no differences between groups (p = .224) at the end of treatment.

There are differences between groups at the end of therapy with the good outcome group presenting a higher proportion of high-level IMs at the end of treatment (p = .035). The good outcome group showed a steady increase throughout treatment and higher proportion of high-level IMs at the end of treatment, when the poor outcome group showed a small decrease, after a sharp increase from the beginning till the middle sessions (Figure 2). This sharp increase in the poor outcome group from the initial sessions was statistically significant (p <.001). On the other hand, the good

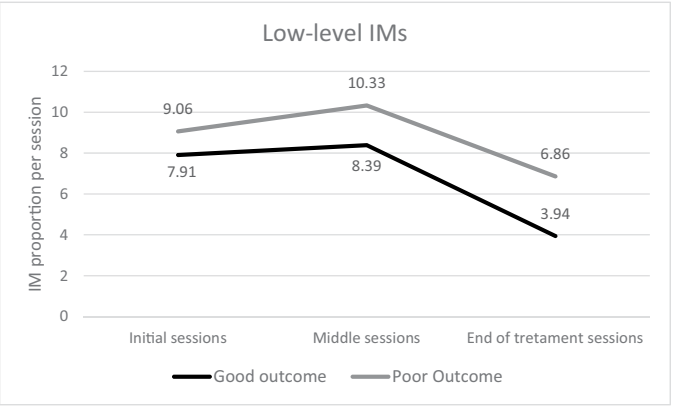


Figure 1. Model of the mean trajectories of low-level IMs between good- and poor-outcome groups.

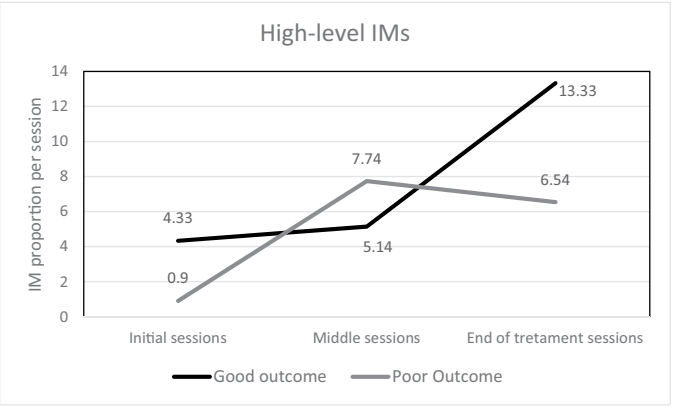


Figure 2. Model of the mean trajectories of high-level IMs between good- and poor-outcome groups.

outcome group presented a significant increase in high-level IMs from the middle sessions till the end of treatment (p = .053).

Aim 2: Investigating IMs as a predictor of symptom change and vice versa

First, the model with IMs as predictors of binge and purge frequency in the following session was tested (Table 6). Both low-level IMs (B = −0.04, SE = .02, *Wald* χ^2 = 3.99, p = .046, QIC = 70.49) and high-level IMs (B = −0.04, SE = .2, *Wald* χ^2 = 5.82, p = .016, QIC = 68.12) in one session had a significant effect on binge and purge frequency in the following session. These findings indicate that an increased presence of low-level and high-level IMs in one session was associated with a reduction in binge and purge frequency reported in the following session.

The reversed model with symptomatology as a predictor of IMs in the following session was tested (Table 7). Binge and purge frequency did not predict the presence of low-level IMs (B = −0.02, SE = .01, *Wald* χ^2 = 1.64, p = .20, QIC = 47.36) but it did significantly predict high-level IMs (B = −0.07, SE = .02, *Wald* χ^2 = 10.20, p < .001, QIC = 134.05) in the following session. This indicates that the amount of binge

Table 6. Parameters of separate models predicting binge and purge frequency.

Model	B	SE	95% CI	*Wald's* χ^2	*p*	Goodness-of-fit (QIC)
Low-level	−0.04	.02	−0.07, −0.006	3.99	.046*	70.49
High-level	−0.04	.02	−0.07, −0.004	5.82	.016*	68.12

Note. QIC = Quasi-likelihood under independence model criterion.
*p <.05.

Table 7. Parameters of separate models predicting IMs.

Model	B	SE	95% CI	*Wald's* χ^2	*p*	Goodness-of-fit (QIC)
BP predicting Low level	−0.02	.01	−0.04, .01	1.64	.200	47.36
BP predicting High level	−0.07	.02	−0.12, −0.03	10.20	.001*	134.05

Note. BP = binge and purge frequency; QIC = Quasi-likelihood under Independence Model Criterion.
*p <.05.

and purge frequency was negatively associated with the presence of high-level IMs in the following session. Thus, reduced binge and purge frequency only significantly predicted an increase in high-level IMs in the following session. Examining the QIC, the reverse model of high-level IMs in one session predicting binge and purge frequency in the following session was a better fitting model.

Discussion

The aim of this study was to examine change processes in BN using the IM framework to identify narrative markers of change. We aimed to (a) study how IMs evolve throughout treatment in a sample of good and poor outcome cases of BN undergoing ICAT, and (b) examine the longitudinal relationship between symptomatology change and change in IMs in BN.

Regarding the first aim of the study, which was to identify patterns of development of IMs in good and poor outcome cases of BN, significant differences between groups were only found for high-level IMs. At the end of treatment, the good outcome group presented a significantly higher proportion of high-level IMs than the poor outcome group. The good outcome group showed a steady increase, which is particularly significant from mid-treatment till the end of therapy. While in poor outcome group this level of IMs decreased in the final sessions. The final sessions correspond to the relapse prevention phase that may have instigated patients to reflect on what is different now and how the change has occurred, which are two distinctive elements of high-level IMs (Batista et al 2019; Fernández-Navarro et al., 2018; Gonçalves et al., 2017). Even though both groups underwent this phase, it may have led to a more noticeable effect in the good outcome group.

Contrarily, no significant differences were found between groups for low-level IMs, showing that both groups evolved similarly throughout time, where they emerged early on in treatment but subsided toward the end. These are in line with the idea that these types of IMs form the scaffolding for more complex IMs (i.e. high-level IMs) to emerge as they represent the beginning of thinking about change (Batista et al.,

2020). These findings may reflect the patterns of change observed in case studies in BN, where an integration of the adaptive self-narrative becomes increasingly visible as therapy progresses (e.g. Bell, 2013), which are akin to the developmental patterns of high-level IMs observed in the good outcome group. In the IMs line of research, these results are in accordance with previous empirical findings where high-level IMs are distinctive of good outcome groups whereas low-level IMs are present in both good and poor outcome groups (Gonçalves et al., 2017).

Regarding the second aim of the study, examining the predictive value of IMs on BN symptomatology, both low- and high-level IMs significantly predicted a decrease in binge and purge frequency in the following session. The reverse model, where binge and purge frequency in one session predicted IMs in the following session, was only significant for high-level IMs. However, the model where high-level IMs predicted a decrease in binge and purge in the following session was a better fit than the reverse model.

The predictive power of low-level IMs on BN symptoms contrasts with previous findings where low-level IMs were not significant predictors of symptomatic change. It may be possible that low-level IMs showed an important effect on the bulimic symptoms as BN and ED are often characterized by an egosyntonic approach, where the sufferer is often in agreement with the problem, recognizing its benefits and showing high ambivalence to change (Serpell & Treasure, 2002). Low-level IMs allow the patients to differentiate themselves from the problematic self-narrative establishing the first steps toward their change process.

High-level IMs had a higher predictive power over symptoms than low-level IMs, which is consistent with previous findings on narrative therapy and CBT (Gonçalves, Ribeiro, et al., 2016; Gonçalves, Silva, et al., 2017). High-level IMs assume the presence of an alternative perspective where patients are better able to elaborate on the process involved in their transformation. This involves a metacognitive perspective operationalized as high-level IMs that allows the patient to reposition themselves in relation to the problem by focusing on themselves and their recovery in relation to the BN symptoms. It is possible that the alternative meanings to their experiences and the focus on one's own needs play a role in reducing the ambivalence and consequently the bingeing and purging symptoms.

The proportion of the IMs in this study is strikingly low compared to the proportion found in other studies (e.g. Alves et al., 2012; Gonçalves, Silva, et al., 2017; Mendes et al., 2010). Interestingly, Gonçalves, Silva, et al., (2017) found a similarly low proportion of IMs in CBT for depression. This could be explained in one of two ways. Firstly, it is possible that the low IM proportion is explained by the idiosyncrasies of the treatment model with a focus on behavioral modifications as a primary indicator of recovery. In a previous study of IMs in CBT (Gonçalves, Silva, et al., 2017), the authors argued that it is possible that CBT produced change that was not observable using IMs due to the highly directive nature of the approach. For example, one of the relevant features of treatment models underpinned by CBT is the amount of time in the session taken by the therapist to explain psychoeducational material and the treatment process. In the IMs literature, and in this study, the IMs proportion is calculated as the time the patient spent elaborating IMs in relation to the total duration of the session. However, the total duration of the session also includes a considerable amount

of time of the session dedicated to the therapist. Therefore, it is possible that the way the proportion of IMs was calculated was not an accurate representation of the amount of time dedicated to the patient's meaning-making processes as it includes the therapist's speech time. It is likely that this is also the case with ICAT, as it is a model based on cognitive behavioral principles. Therefore, it could be hypothesized that narrative change reflecting meaning-making captured by the IMs framework was not adequately captured with the IMs framework given the directive nature of the treatment. It may also be hypothesized that the narrative change captured by the IMs framework is not aligned with behavioral modifications as the primary outcome in ICAT for BN. Secondly, it could be hypothesized that the low proportion of IMs indicates a true effect, where participants experienced fewer IMs than samples in other studies. It is possible that increased ambivalence often observed in BN (Wade, 2019), as well as the increased difficulties with self-discrepancy in BN as a result of high evaluative standards (Wonderlich et al., 2015), prevented participants from progressing meaningfully toward an integration of the contrasting narratives in the context of ICAT. Previous studies have found that ambivalence is a significant block to the elaboration of IMs (Braga et al., 2019; Ribeiro et al., 2016). Because EDs tend to have lower recovery rates than other major psychological difficulties such as depression (e.g. Richards, 2011), it is also possible that the emergence of IMs is less significant than in other samples.

This exploratory study has several limitations. This study used a small sample size and suffered from low statistical power, therefore increasing the probability for a Type 2 error. Also, strict recovery criteria were used for the good-outcome cases, resulting in some patients who showed improvements but did not meet recovery criteria being classed as poor-outcome cases at the end of treatment, and therefore threatening the validity of our first analysis. Additionally, this study did not consider the effect of patient characteristics on the elaboration of IMs. Patient characteristics (e.g. interpersonal behavior) can have a significant impact on process-outcome associations (e.g. Orlinsky et al., 2004). It is important to note that this sample was drawn from participants of an RCT and therefore is likely to present with reduced ecological validity given the strict exclusion criteria. Therefore, the applicability of our results onto clinical practice should be exercised with caution. In addition, the study did not consider therapists' effects. Given that the treatment was delivered by two therapists, it might have been helpful to examine whether any differences in their interventions impacted the emergence of IMs. The sample size did not allow for controlling over the effects of these variables.

Conclusion

Despite these limitations, this study highlights the importance of mapping the longitudinal change of patients as it has the potential to show facilitating processes that can impact treatment outcome, which may improve therapist responsiveness and adaptability in emerging therapeutic contexts (Bohart & Wade, 2013). We hope that this preliminary exploration informs further investigations of IMs in BN addressing some of the questions this study raised.

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ORCID

Iakovina Koutoufa http://orcid.org/0000-0001-5532-0464

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