Fostering Compassion and Mindfulness: Exploring Narratives of Depressed Individuals Undergoing Mindfulness-Based Compassionate Living Treatment

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Masterthesis: Positive Clinical Psychology and Technology

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July 1, 2024

Abstract

Background: Mindfulness-Based Compassionate Living (MBCL) is a promising follow-up to Mindfulness-Based Cognitive Therapy (MBCT) for treating depression. While its effectiveness is established, there is a lack of research on changes in participants' narratives post-treatment. Studying narratives can close the gap between theory and practice. This study examines changes in experience domains and agency levels in participants' narratives undergoing MBCL, and explores the relationship between these changes and depression levels to gain a deeper understanding of depression beyond clinical measures.

Methods: The study employs an exploratory two-step research design. The pre- and post-interviews of 24 participants were analysed using Digital Story Grammar (DSG) to extract narrative aspects of the text. The data was integrated with statistical analysis to examine changes and their relationship to Beck Depression Inventory (BDI) scores. Furthermore, a selection of interviews was reviewed for a comparative analysis with the statistical results.

Results: Participants' post-interview narratives focused less on the mental subdomain, with more emphasis on actions related to the main character or object, and showed a reduction in agency. Despite these changes, no relationship was found between subdomains of experience and depression levels or agency levels and depression levels, likely due to the small sample size. A review of selected interviews suggests that narratives focusing on thinking and feeling reflect participants' therapeutic process, while others describe their lives in the context of therapy.

Conclusion: The transition from reflexive thought to the present moment observed in participants may be indicative of mindfulness. It would be beneficial for professionals to consider this when tailoring treatment and explaining patient experiences. Further research with a larger sample size is required in order to explore the relationship between depression levels, experience domains, and agency levels. Furthermore, this research indicates the potential value of utilising Digital Story Grammar (DSG) in psychological research.

Keywords: Depression, MBCL, Compassion, Digital Story Grammar, Positive Psychology, Narrative Psychology

Introduction

Mindfulness Compassion-Based Living (MBCL) is a novel and promising follow-up treatment for Mindfulness-Based Cognitive Therapy (MBCT) developed to treat depression. Although there have been studies demonstrating its efficacy (Schuling et al., 2016, 2020), there has been no research on the specific experiences participants undergo and how their self-perception changes, nor on the relationship between these experiences and changes in depression. Exploring the narratives of patients undergoing treatment can help to better understand how to apply treatment and potential challenges that might arise. The present study aims to address this gap by employing text mining and narrative analysis.

Depression and Narratives

Depression contributes significantly to the burden of disease worldwide (Global Burden of Disease Collaborative [GBD], 2021) and continues to increase in prevalence and incidence (Moreno-Agostino et al., 2021). According to a recent report by the World Health Organization (WHO, 2022), 5% of adults over the age of 20 were suffering from depression in 2019, making it the leading mental health disorder causing disability and the second most common disabling condition in the world. Depression is associated with high economic costs due to treatment costs but also costs due to indirect causes such as reduced economic productivity, higher unemployment rates, and a range of other economic costs (König et al., 2020). In addition, depression has been linked to a negative impact on the quality of life of individuals (Briley & Lépine, 2011), and critiques of the burden of depression estimates by GBD have highlighted the role of depression as a major factor in suicide deaths (Vigo et al., 2016).

The *Diagnostic and Statistical Manual of Mental Disorders* (p. 155, 5th ed.; DSM-5; American Psychiatric Association [APA], 2013) considers Major Depressive Disorder to be the prototypical form of depression. The disorder is characterised by discrete episodes lasting at least two weeks, accompanied by changes in affect, cognition, and neurovegetative functions, with inter-episode remissions. The degree of depression can be measured using a variety of clinical scales, such as the Beck Depression Inventory-II (BDI-II; Beck et al., 1996). Although the DSM-5 definition provides an overview of the different symptoms associated with depression and the scales are able to differentiate between severity levels, they provide only a partial insight into the complex reality and experiences of people suffering from depression. This was demonstrated by Kagan (2007, as cited in Angus and Kagan, 2013), who found that even clients who had the same BDI score at the end of therapy spoke differently about the changes they had experienced at the end of therapy. In addition, Kokanovic et al. (2013) notes that depression is often attributed to complicated, interrelated causal factors that challenge the application of fixed categorisations and treatment decisions.

Exploring individual narratives can bridge the gap between lived experience and clinical test results. This approach offers insights beyond clinical symptoms by explaining disorders in their socio-cultural context, which is crucial for developing effective treatments. Understand-

ing patients' self-perceptions, relationships, and roles from their perspective can significantly improve therapeutic outcomes (Flynn, 2010). Therapeutic approaches like narrative therapy, which assume that stories people construct can contribute to their problems, show how reviewing and working through these stories can help build coping strategies (White & Epston, 1990). Narrative-based exercises, such as writing short stories about personal experiences, have been shown to improve physical and mental health (Pennebaker & Seagal, 1999), reduce the severity of PTSD in people who have experienced psychotic episodes (Bernard et al., 2006) and improve the overall effectiveness of psychotherapy (Adler et al., 2013).

The analysis of narratives has also been deemed important in research. As described by Sools et al. (2015), research in the emerging field of narrative health psychology, which focuses on the study of narratives and emphasises the perspectives of patients and practitioners, has enabled the acquisition of a comprehensive understanding of client suffering, which includes resources such as "strengths, social connections, well-being, spirituality, future imagination". The authors conclude that psychological research focusing on narratives in healthcare care can facilitate the integration of research into practice.

Depression and Self-Compassion focused therapy

Over the past decades, the focus of psychological treatments has shifted from reducing symptoms to preventing the emergence of psychological disorders and maintaining mental health. It is widely recognised today that mental health is more than the mere absence of symptoms but the ability to connect, function, be resilient, and thrive (WHO,2022). Positive psychologists coined the term well-being to describe this state beyond symptom absence and function (Keyes, 2002, 2005; Westerhof & Keyes, 2010) and positive psychology interventions (PPI) have been shown to be an effective tool to increase well-being levels and reduce depression levels (Bolier et al., 2013).

An example of an effective PPI is Mindful Based Cognitive Therapy (MBCT), which combines cognitive behavioural therapy with mindfulness-based stress reduction in a group format of eight sessions. Originally developed to prevent relapse in people with recurrent depression, it has also been used to treat a variety of psychiatric conditions (Sipe & Eisendrath, 2012). MBCT has been associated with a potentially similar efficacy to Cognitive Behavioural Therapy (CBT) in the treatment of recurrent depression (Strauss et al., 2014), but a recent article pointed to mixed results for the cognitive outcomes of MBCT in the treatment of depression (Kraines et al., 2022).

Recent studies evaluated the Mindfulness-Based Compassionate Living (MBCL) treatment (Schuling et al., 2016, 2020), which is a follow-up programme to MBCT and has a more explicit focus on cultivating self-compassion compared to MBCT (Van den Brink & Koster, 2015). MBCL is based on the idea of self-compassion, which is valuable in the treatment of depression. Self-compassion consists of three main components: Self-kindness, common humanity and mindfulness, which interact and overlap with each other (Neff, 2003). Gilbert (2009) argues that shame and self-criticism are trans-diagnostic markers and suggests developing skills in self-compassion through therapy approaches that focus on self-compassion. The results of sev-

eral meta-reviews on the effectiveness of self-compassion and compassion-based interventions suggest that it is a promising approach for treating depression, anxiety, and psychological distress (Craig et al., 2020; Ferrari et al., 2019; Kirby et al., 2017). The study of Schuling et al. (2016) demonstrated that MBCL, when offered as a sequential intervention to MBCT, significantly reduced depressive symptoms, rumination, and improved self-compassion, mindfulness skills, and quality of life. Furthermore, sustained and further improvements were observed during follow-up, indicating the potential of MBCL to reduce relapse rates for patients with recurrent depression (Schuling et al., 2020).

Extracting Narratives with Text Mining

As psychology has a long history of analysing text, text mining represents the latest advancement in continuing this tradition. While traditional text analysis relies on human coders, text mining uses computers and natural language processing (NLP) algorithms to automatically process text produced by humans. NLP allows to analysis of big amounts of text data (Iliev et al., 2015) while being a reliable alternative to traditional qualitative research (Yu et al., 2011). Digital Story Grammar (DSG) is a novel NLP algorithm that can extract narrative aspects from text (Andrade & Andersen, 2020). Unlike traditional text mining approaches, DSG does not focus on word counts but on the meaning of words within sentences. DSG uses an algorithm that segments text into narrative units consisting of a subject-noun, a verb and an object (Andrade & Andersen, 2020). For an example of narrative units refer to Table 1.

Table 1

Example of Narrative Units Assigned to the Three Different Realms Transformed with DSG

Unit	Subject	Verb	Object	Realm
1	I	am	a lot of things	Being
2	I	have lived under	a lot of pressure	Doing
3	I	like to give	people	Sensing

Note. The examples are narrative units from the interviews used in the present study

Andrade and Andersen (2020) sees DSG in line with Bruner (1988) who suggests that storytelling is a fundamental way for people to make sense of what they experience and to feel empowered. Jerome Bruner was a pioneer in the field of narrative analysis in psychology during a new wave of popularity beginning in the 1980s (Murray & Sools, 2014). Bruner (1994) proposed a method of analysing personal experiences by examining the narratives that individuals construct for themselves. In his analysis, he uses Burke's concept of *the dramatistic pentad* as a framework for the narrative. According to Burke (1969), storytelling involves the act, agent, scene, agency, and purpose. These elements can be used to analyse communication and gain insight into the motives behind an act. Therefore, Burke's framework remains useful for the systematic analysis of narratives (Shearer, 2004). Andrade and Andersen (2020) use Burke's *the dramatistic pentad* as theoretical framework for analysing text with DSG.

To determine different types of acts, as Burke (1969) proposes, DSG assigns narrative

units to realms based on Halliday's domains of experience consisting of *doing*, *sensing*, and *being* (Halliday et al., 2004). Each domain of experience is further divided into two sub-domains. Andrade (2020) describes the domain *doing* experiences in the external world and involves actions and events. It focuses on physical activities. This domain is further subdivided into the *Material* sub-domain which describes outer processes, while the *behavioural* sub-domain describes manifestations of inner workings. The *being* domain describes the identification and classification of things within relationships. The *existential* subdomain describes actions related to the main character or object in a narrative (e.g. "there are..."), and the *relational* subdomain describes states of being (e.g., "x is a" or "x is at a"). Lastly, the *sensing* domain describes experiences and perceptions of the world. The *verbal* subdomain describes all forms of communication, while the *mental* subdomain describes internal actions such as thinking and feeling. This contains *perspective* (feeling, sensing), *cognitive* (believing, thinking), *desiderative* (wanting, wishing), and *emotive* (enjoying, hating). For an example of action realms assigned to narrative units, refer to Table 1.

A fundamental psychological force that shapes narratives, and therefore human experience, is the concept of agency (Burke, 1969; McAdams et al., 1996). Agency is closely related to a person's sense of meaning and purpose, focusing on individual autonomy, achievement, mastery, and the ability to shape one's life path (Adler, 2012). Several studies have found a strong correlation between agency and psychological well-being (e.g., Bandura, 2006; Deci & Ryan, 2000). Research exploring aspects of self-narratives among people with depression has also highlighted the significance of agency. Additionally, narratives from individuals with a depressed explanatory style tend to overemphasise agency in negative outcomes and underestimate it in positive outcomes (Adler et al., 2006; Habermas et al., 2008). Similarly, Muntigl (2016) found that the narratives of patients with depression who engaged in emotion-focused psychotherapy often conveyed feelings of helplessness and low agency levels. Adler (2012) suggests that an increase in the narrative theme of agency is correlated with finding purpose and meaning in life. These improvements in mental health persist even after controlling for other personality constructs, the passage of time, and various individual differences.

To analyse agency, Andrade and Andersen (2020) draws upon the findings of Burke (1969) and O'Connor (2000). For Burke (1969) agency describes how an act in a narrative is accomplished. To investigate how an act is accomplished using DSG Andrade integrated the findings of O'Connor (2000): Demonstrating in his research with male prisoners that those who perceive themselves as the reason for their imprisonment tend to say "I robbed", thereby admitting their agency. In contrast, those who perceive the justice system as the cause of their imprisonment tend to respond with a statement such as "They charged me of robbery," thereby denying any agency. The "I" and "me" are the indicators of how an act is accomplished. Andrade and Andersen (2020) use these findings to investigate how individuals perceive their role in their narratives in terms of agency. The relative distribution of narrative units, which positions the narrator as either "I" (the subject of an action) or "me" (the object of an action), can be quantified

by computing an “I/me ratio”. A high ratio indicates a higher frequency of the word “I” compared to “me”, thereby indicating a higher degree of agency. Conversely, a low ratio indicates a higher frequency of the word “me” over “I”.

Present Study

As presented above, increasing evidence suggests that MBCL effectively treats depression, but there is a lack of information on the experience of individuals who participate in MBCL. Narrative psychology provides insight into the complex experiences of participants, functioning as a bridge between theory and practice. The present research explores the narratives of the participant in a MBCL and focuses on the role of agency which has been a common theme in self-narratives about depression. To analyse the interviews, DSG is employed as it allows extracting aspects of narratives related to agency and actions that integrate into statistical analysis. This makes it possible to relate levels of depression from depression scales to narratives of individuals. As DSG is an NLP algorithm, it is constrained in its capacity to interpret humour, sarcasm, novel linguistic permutations and slang, which may be prevalent in certain types of qualitative data (Chang et al., 2021). To address this limitation, qualitative case reviews will be conducted as a complementary measure.

To the author’s knowledge, no prior research has investigated interviews of individuals with depression who participated in MCBL or another form of treatment using digital story grammar. Consequently, the contribution of this study is twofold. Firstly, it has the potential to advance the development of MCBL by shedding light on its underlying mechanisms or identifying critical application factors. Secondly, while digital story grammar (DSG) is a relatively novel approach in text mining, its application in psychological research has been limited, with few exceptions (see Mühlbauer, 2022; Pieroth, 2022). Hence, the findings of this research may offer information on the broader possibilities and limitations of DSG in psychological research. This study formulated Research Questions (RQ) concerning agency in depression narratives and how Burke’s pentad, which includes agency as a dimension, can inform narrative investigations.

RQ 1: How do domains of experience in participants’ narratives change before and after the compassion intervention?

RQ 2: How does agency in participants’ narratives change before and after the compassion intervention?

RQ 3: How do shifts in the domains of experience within participants’ narratives relate to changes in their depression levels?

RQ 4: How do shifts in agency before and after the compassion intervention relate to changes in depression levels?

RQ: 5 How do the participants’ pre- and post-MBCL interviews reflect the observed changes in narratives in terms of agency and domains of experience?

Methods

Study Design

The present study employs an exploratory two-phased mixed method research approach inspired by Chang et al. (2021). In the first phase, DSG data will be analysed using a statistical method, which is followed by reviewing a selection of the interviews. For a visualisation of the steps of the study, see Figure 1.

Participants

The sample of 24 participants recruited by Schuling et al. (2016) consists of patients with recurrent depression who had previously participated in an MBCT course at the Radboud UMC Centre for Mindfulness in Nijmegen, The Netherlands. A letter was sent to the centre's patients, which explained the study and invited them to participate. Those who expressed interest were interviewed, and a number of questions were asked, including details of their sociodemographic characteristics, the medical and psychiatric therapies they had received in the previous half-year, their current medications, and the extent to which they continued to practice mindfulness. The study included patients who met the criteria for recurrent depressive disorder, as defined in the Diagnostic and Statistical Manual of Mental Disorders (4th edition; DSM-IV), with or without a current depressive episode. Additionally, the patients had to have completed at least four sessions of MBCT in the previous year. Individuals were excluded if they had a primary psychotic disorder, one or more previous (hypo)manic episodes as defined by DSM-IV criteria, clinically relevant neurological or somatic conditions that could be causally related to depression, current alcohol and/or drug dependence, electroconvulsive therapy within three months, or inability to complete interviews and/or self-report questionnaires.

The sample consists mainly of women and a minority of men. Most participants are between the ages of 50 and 60 while 66.68% of the participants are 50 years of age or older. Participants were grouped according to their level of education, with the majority falling into the medium education category, followed by high and low education. Finally, based on the status of major depressive disorder, the majority of participants were categorised as being in partial remission (54.17%), followed by those in the current episode (25.00%) and those in full remission (20.83%). A comprehensive overview of the demographic characteristics of the participants is presented in Table 2.

Material

Interview Data

The data consist of pre- and post-interviews which were conducted face-to-face, starting with an introduction and a three-minute breathing space. During the pre-MBCL interviews, participants were prompted with the open question: "In the following minutes, could you please tell something about yourself as a person? I am not looking for information about age or work, but more on what kind of person are you? How do you see yourself? You could start with the following words: I experience myself as...". The post-MBCL interviews began with a recap

Table 2
Demographic Characteristics of the Sample

Characteristic	N = 24[1]
Sex	
Female	21 (87.5%)
Male	3 (12.5%)
Age Range	
20-30	1 (4.2%)
30-40	3 (13%)
40-50	4 (17%)
50-60	10 (42%)
60-70	4 (17%)
70-80	1 (4.2%)
80-90	1 (4.2%)
Educational Level	
Low	3 (13%)
Medium	16 (70%)
High	4 (17%)
Unknown	1
Major Depressive Disorder Classification	
Current episode	6 (25%)
Partial remission	13 (54%)
Full remission	5 (21%)
BDI Scores	
Pre	17 (9)
Post	11 (9)
Unknown	2

Note. [1] n (%); Mean (SD)

and asked participants: "Has the experience of yourself changed recently? You could start with the following words: I experience myself differently in the sense that, or I do not experience myself differently in the sense that…". The interviewers were instructed not to ask additional questions to avoid influencing the patients' narratives. The recordings were transcribed verbatim. Pre-interviews averaged 2 min 45 s (range: 41 s to 6 min 37 s) and post-interviews averaged 3 min (range: 46 s to 8 min 54 s). Duration was measured from the start of the patients' responses to their last word.

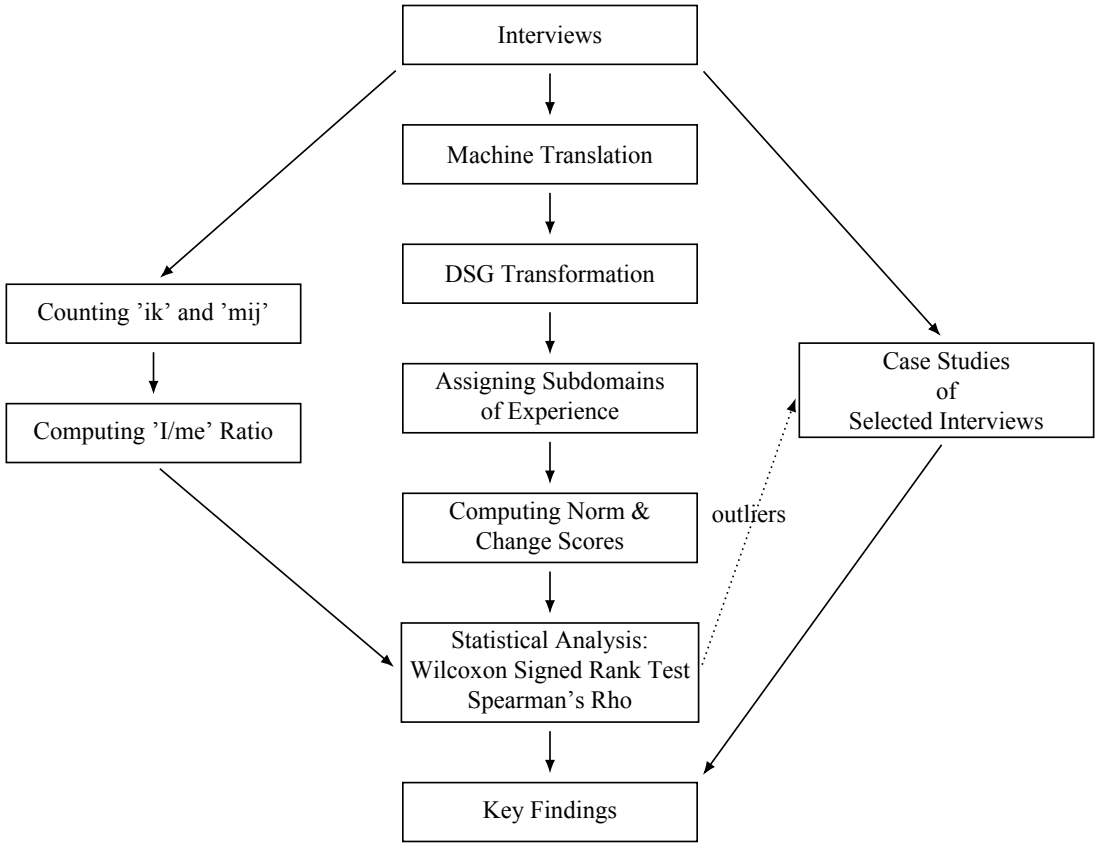
Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI), a 21-item self-administered questionnaire that measures the severity of depressive symptoms in adults and adolescents, was employed by Schuling et al. (2016) before and following the intervention. Respondents were asked to rate their feelings over the past two weeks on a 4-point scale (0 to 3). A score of 0 to 13 indicates minimal depression, 14 to 19 mild depression, 20 to 28 moderate depression, and 29 to 63 severe

depression (Zgaljardic, 2011). The study employed the Dutch version of the BDI (Van der Does, 2002). Cohen's alpha for the BDI was reported to range from .82 to .91 for internal consistency, while retest reliability was reported to range from .73 to .96 (Wang & Gorenstein, 2013).

Data Analysis

Figure 1
Data Analysis Steps



The interview data was translated from Dutch to English using the DeepL Translator (DeepL SE, 2024). It was then transformed into narrative units using the DSG algorithm, and an overview table of the distribution of narrative units was computed for each participant. Following this, the data underwent further cleaning, transformation and analysis using R Statistical Software (R Core Team, 2024). Tables presenting the distribution of the narrative units by demographic characteristics and by participants were created using the *gtsummary* package (Sjoberg et al., 2021).

As the DSG algorithm solely assigns the domains of experience, subdimensions of the domains as operationalised by Andrade et al. (2022) for DSG were manually assigned to each narrative unit. Furthermore, from the Dutch interview transcripts, the occurrences of "I" ("ick") and "me" ("mij") to analyse agency were counted for each interview.

Given the considerable variation in the total counts observed across participants for each sub-dimension and "I" and "me", counts were normalised to ensure comparability across participants. To normalise the sub-dimension counts, the percentage of each sub-dimension

count was calculated relative to the participant's total sub-dimension count. To quantify levels of agency, an I/me ratio was computed using the following formula: Agency $= \frac{I}{I+me}$. This formula provides a normalised solution that avoids the issues caused by division by zero, which were encountered in the present study in several participants when using the ratio $\frac{I}{me}$ as used by Andrade and Andersen (2020).

To investigate the first and second research questions concerning changes in scores of subdomains of experience and levels of agency, the Wilcoxon signed-rank test was employed to compare the counts of the pre-and post-interview. A box plot visualises the distribution for each sub-dimension and the agency pre- and post-MBCL treatment, as well as showcasing the statistical significance of the observed changes. To investigate the third and fourth research questions, change scores for each sub-dimension, for the agency scores and BDI scores, were calculated. The change scores were employed to compute descriptive statistics and Spearman's rho, which were subsequently presented in a table. Using the *pwr* package (Champely, 2006), a post hoc power analysis was conducted to examine the statistical power of Spearman's rho.

Finally, a selection of interviews with high change scores in the mental sub-dimension, and experiential sub-dimension was reviewed. The analysis focused on the narrative aspect of what is discussed and how this could relate to the changes in Halliday's operationalisation. Participants were chosen since they had outlying scores in the mental and experiential subdomain of experience, there were other participant randomly selected for comparison. Following the case reviews, the implications of the reviews are compared. For a visualisation of the steps of data analysis, refer to Figure 1.

Results

Statistical Analysis

Digital Story Grammar Data

As Table 3 shows, a total of 2108 narrative units were extracted from all interviews, with 859 (M = 27) units derived from the pre-interview phase and 1249 (M = 42) units derived from the post-interview phase. The proportions of units extracted remained consistent before and after the interview across sex, age, and education level, aligning closely with the demographic characteristics of the participants as presented in Table 2. Notably, within the MDD categorisation, there is variation from pre- to post-interview units. A particularly high number of narrative units in both periods were extracted from participants 79, 81, 83 and 96, while there was a very low number of narrative units extracted from participants 80, 85, 106 and 113 after treatment compared to their pre-treatment. For a detailed overview of the narrative units for each participant, refer to Appendix A.

Analysis of Changes in Domains of Experience and Agency Post-MBCL Treatment

To examine changes in narratives in the domains of experience and agency from pre- to post-MBCL treatment, the Wilcoxon signed-rank test was conducted due to the data not meeting the linearity assumption required for regression analysis. As also illustrated in Figure 2, the

Table 3
Distribution of Narrative Units by Demographic Characteristics

Characteristic	**Overall** (N = 2108)[1]	**Pre** (N = 859)[1]	**Post** (N = 1249)[1]
Sex			
Female	1,792 (85%)	735 (86%)	1,057 (85%)
Male	316 (15%)	124 (14%)	192 (15%)
Age Range			
20-30	92 (4.4%)	47 (5.5%)	45 (3.6%)
30-40	136 (6.5%)	54 (6.3%)	82 (6.6%)
40-50	437 (21%)	149 (17%)	288 (23%)
50-60	953 (45%)	395 (46%)	558 (45%)
60-70	416 (20%)	193 (22%)	223 (18%)
70-80	45 (2.1%)	12 (1.4%)	33 (2.6%)
80-90	29 (1.4%)	9 (1.0%)	20 (1.6%)
Educational Level			
Low	241 (12%)	81 (9.6%)	160 (13%)
Medium	1,524 (74%)	635 (76%)	889 (73%)
High	300 (15%)	124 (15%)	176 (14%)
Unknown	43	19	24
MDD			
Current episode	668 (32%)	236 (27%)	432 (35%)
Partial remission	1,085 (51%)	465 (54%)	620 (50%)
Full remission	355 (17%)	158 (18%)	197 (16%)

Note. [1] n (%); *MDD = Major Depressive Disorder Categorisation*

narratives of the participants demonstrated significantly lower levels in the mental sub-dimension (W = 229.5, p = .01) and reduced levels of agency (W = 133, p = .008). The test did not reveal statistically significant differences between pre-and post-interviews for the behavioural (W = 44 p = .94), existential (W = 83.5 p = .06), material (W = 127.5 p = .76), relational (W = 76 p = .07), and verbal (W = 66.5 p = .65) sub-dimensions.

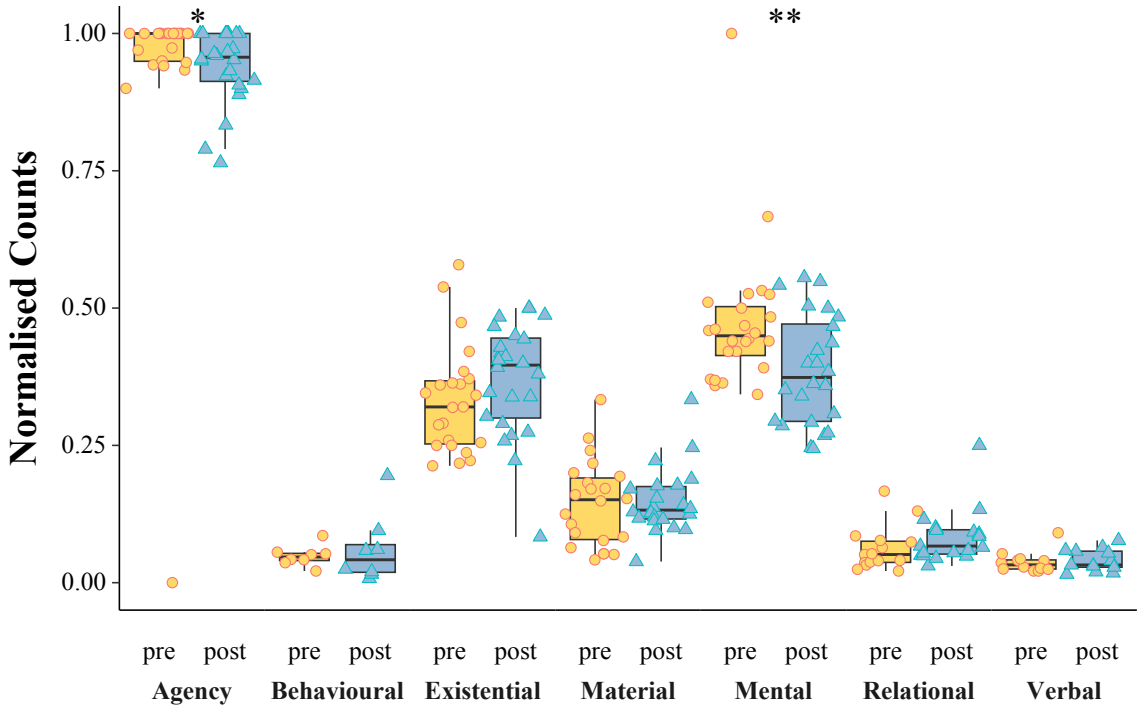
Changes in Narratives Related to Changes in Depression

To investigate the relationship between narrative changes in the subdomains of experience and levels of agency with levels of depression, descriptive statistics and Spearman's rho were computed. As illustrated in Table 4, the depression change score demonstrates a median decrease, accompanied by a wide interquartile range. The agency scores exhibit a minimal overall decrease with a narrow interquartile range. The mental subdomain scores indicate a slight median decrease and reduced variability. As the Wilcoxon test did not reveal significant changes, no conclusions can be drawn from the descriptive statistics regarding the changes in the other sub-dimensions of experience.

Spearman's rho did not reveal any statistically significant correlations between changes in depression scores and changes in the domains of experience, nor between levels of depression and levels of agency. Post hoc power analysis ($\alpha = .05$) using the *pwr* package (Champely, 2006)

Figure 2

Comparison of Pre- and Post-Percentage Frequencies of Sub Dimensions



Note. **< .01. .*< .05 Wilcoxon Ranked Sign Test

indicated insufficient statistical power for Spearman's rho tests involving the change scores of depression, the dimensions of experience, and agency: mental (.05), verbal (.08), existential (.29), relational (.27), material (.09), behavioural (.08), and agency (.08).

However, as shown in Table 4, a statistically significant strong negative correlation was found between the Mental and Existential sub-dimensions, observed with sufficient power (.92). Analysis of both pre- and post-scores for these variables (see Figure 2) reveals that a higher count of narrative units in the Existential sub-dimension is strongly associated with a lower count in the Mental sub-dimension.

Case Reviews

To examine how the participants' pre- and post-MBCL interviews reflected the observed changes in narratives in terms of agency and domains of experience, a selection of pre-and post-interview transcripts was subjected to review. The analysis focused on the content of the self-description, as well as the use of verbs related to the mental and experiential sub-dimensions, and the use of "I" and "me". Three participants were selected based on their outlying scores in the mental and experiential subdomains and agency (73, 92 and 81) while three other participants were randomly selected (79, 80 and 96).

Participant 73 is a female patient aged between 50 and 60 years old. She is classified as being in partial remission from major depressive disorder (MDD). Her level of education is unknown, and her score on the Beck Depression Inventory (BDI) prior to MBCL treatment

Table 4
Descriptive Statistics and Spearman's Rho of Change Scores

Variable	Mdn	IQR		1.	2.	3.	4.	5.	6.	7.
		Q1	Q3							
1. Depression[a]	-6.5	-14.25	-2.75							
2. Agency [b]	-.014	-.07	.00	.10						
3. Mental	-.07	-.13	.00	-.02	.17					
4. Verbal	0	-.02	.03	-.10	-.16	-.18				
5. Existential	.03	-.01	.14	.29	.11	-.62*	-.31			
6. Relational	.02	-.02	.06	-.28	-.10	.20	-.07	-.39		
7. Material	.03	-.06	.08	-.12	-.23	-.37	.37	-.32	-.25	
8. Behavioural	0	-.01	.01	-.11	.01	-.08	.03	.03	-.27	-.15

Note. [a] BDI1 scale scores; [b] values from I/me Ratio; *p < .05.

was 16. Following MBCL treatment, her score was 1. She exhibited outlying scores in changes scores for the mental sub-dimension (-.50) and the existential sub-dimension (.50), as well as non-outlying scores in levels of agency (.02). In her preliminary interview, she demonstrated a tendency to prioritise the needs of others, placing their concerns above her own. She also emphasised the importance of the opinions of others. Since the individual in question discovered mindfulness in the years prior to MBCL, she has observed that she is restless but tends to live in the moment and think about the future. She dislikes dwelling on the past. Furthermore, she discusses her hobbies.

> I experience myself as um... a caring, understanding person.... Definitely focused on other persons, but not much on myself [...] Lately more um or the last two years I've been thinking more about myself because of mindfulness, um on the inside I'm regularly restless, but on the outside people don't see that... And I'm very often very cheerful, I love nature [...] enjoy living in the here and now. Um the past eh not really living in the past but definitely in the future. Um I like looking neat, um and I think it's very important to know how another person thinks about me.

The themes discussed in the first interview are transformed in the follow-up interview. The participant no longer gives self-descriptions of herself as a person or of her hobbies. Instead, she describes the processes she has gone through during therapy that have helped her to achieve a balance between caring for others, which remains an important aspect of their life, and caring for their own needs, which she perceives as an improvement. The decrease in the mental sub-dimension and the increase in the existential sub-dimension can be observed in the interview excerpts. While in the pre-MBCL interview, there are sentences containing words such as "thinking" and "like" which are actions belonging to the mental sub-dimension these actions are less apparent in the second excerpt. The post-interview entails often phrases beginning with "I am" which belongs to the existential subdomain.

> I experience myself as uhm someone who is more in control of myself now. […] By nature I tend to always look after someone else, but I look after myself more now

> and I allow myself a bit more time for that and uhm space for sure and yes I am very grateful for that, for myself. In difficult situations for example, my daughter has had a child and um and I am very much involved with that. I am helping, because she was born much too early […] I can help and then it's over for me and then she can call on someone else for a while, and I'm very happy to roof that better now, at this moment.

Participant 92 is a female patient aged between 30 and 40 years, classified to be in partial remission of MDD, with a medium level of education, an unknown BDI score before MBCL treatment, and a BDI score of 14 following MBCL treatment. She was chosen as an outlier as she has a high negative change score in the mental sub-dimension (-.33) and a moderate change score in agency (-.09) and the existential subdomain (.13). Before the intervention, participant 92 identified herself as a person who was "good" to their partner, son and friends. However, she also perceives herself as lacking self-love, struggling to stand up for herself, experiencing high levels of self-criticism, being dissatisfied with life, and feeling guilty and depressed.

> I see myself as a very sweet person, someone who is very committed to other people, very involved with other people, with the environment […] Can be a good and strong person, but... not always stands up for herself and actually needs help with that, from within or from other people, um... Yes, I also see myself as […] I think a wrong word but negative person. I see a lot of faults in myself. Um, things that I would like to see improved or that would make dealing with ehm immediate environment with my family, private life easier and then I mean ehm insecurity, inferiority. The, not loving yourself so to speak, not being able to love yourself... […] I am also a good person […] for friends, so yes, actually focusing a lot on others. Good for my little son, partner... and that's the first thing actually I can think of. Beyond that, I don't know.

In the post-interview, however, participant 92 presents a very different self from the one previously described. She presents herself as having made positive changes. As someone who has imperfections, she contextualises these imperfections within the wider spectrum of human experience, recognising that everyone has flaws that need to be addressed. She also reports an absence of guilt and depressive symptoms. Social relationships remain an important aspect of the individual's life but now have an additional quality: mutual respect and personal boundaries. The participant reflects on having developed the capacity to love themselves, which she perceives as enriching and deepening their life experience. Looking at the excerpts of both interviews one can see that she uses many verbs belonging to the mental subdomain such as "think", "know" and "find" but in the post-interview, which is also a little longer she adds more information that does not belong in the mental sub-dimension. For example, "I saw", "I have started", "I am", which changed the proportion the mental sub-dimension took in the narrative and decreased it relatively to the others.

> I have started to experience myself as a better human being through the compassion training in recent months. When I started compassion training, I saw myself as a person who had made many mistakes, but was burdened with feelings […] depressive symptoms. Actually saw life as bleak with occasional peaks. Now I know I am a human being like everyone else who. Yes, who has his problems. […] Another person has completely different problems. Uhm, what I have learned is that yes, my life is mine, that I own it and that I am happy with who I am, that I love who I am. Uhm, yes that I have to love myself to be able to pass on love also to the other person. […] And now I also see myself as a very satisfied person compared to a few months ago. […] An experience, I had with the mindfulness training […] that makes you aware and this is really […] a deepening. It is […] a deepening of your life, I think. You do have to be open to it and pay attention to it, but, yes, I really find it a deepening. Yes, I feel like a richer person.

Patient 80 is a male aged between 50 and 60 years, in full remission of MDD, with a high level of education and pre- and post-treatment BDI scores of 0. He is an outlier within agency change (-.21) and has moderate change scores in the mental (-.17) and existential (.17) subdomains. In the pre-interview, He describes in detail the importance of family, friends and helping others, and does not feel that this interferes with self-care: “I can go along with emotion with others. For myself anyway, I have learned to watch out for that. To not eh collapse with it.”. The intervention reaffirmed this ability for the participants and she also reported increased self-compassion after the intervention and that there was still room for growth:

> “I feel surrounded by eh very many people in eh my environment that eh I care a lot about yes, am close by, have warm feelings, I get that back too, I am actually very eh I feel very satisfied eh in that respect. [...], The first thing that struck me was that, for me, it was a piece of recognition of being kind to yourself, to others, being caring. That um, yes that was there and that um is a very, very big piece of recognition, so that also gave me the occasional ’hey, can I still learn something?’, ’do I still have to learn something or um...’”

As the extract demonstrates, there are several instances in the earlier interviews where the pronoun “me” is used to describe the benefits of self-kindness, such as learning about oneself. According to the I/me ratio, this would indicate lower levels of agency. However, given the context of the sentence, it is debatable whether this can be seen as a lower levels of agency. Instead, it could be argued that this indicates a higher level of agency, as it implies that there is still more to learn about self-kindness.

Participant 81 is a male patient aged between 50 and 60 years, classified as being in partial remission of MDD, with a low level of education and a BDI score of 12 before and 17 after MBCL treatment. He has no exceptional change scores in agency (-.04), in the mental subdomain (-.11), or the existential subdomain (-.05). He describes himself as someone who cares about the

welfare of others and emphasises that he is a people person and a team player who is positive towards others but not towards himself. “I experience myself as a people person. I experience myself as a fairly positive person, certainly towards others, most of the time towards others, but less towards myself”[...]. “I am also a team player, not only in the field but also with people, a shift is observed in the post-interview phase where he describes the change that he is” [...] “a little less inclined to take into account the environment and the people. So I allow myself more, allow my feelings more, open them up a little more” He also adds that he experiences emotional swings from depression to happiness to anger.

Participant 96 is a female patient, aged between 40 and 50 years, experiencing a current episode of MDD. She was characterized by a medium level of education and had a BDI score of 34 prior and a score of 25 following the treatment. She has no outlier score in change in agency (-.12), change in the mental subdomain (-.22), or change in the existential subdomain (.16). She described herself in the pre-interview as “over-emotional”, indicating that she is unable to deal with situations that she knows she should be able to handle rationally: “I can reason that out in theory, but emotionally I have a lot of trouble with that.” Especially when individuals fail to meet the standards she sets for herself: “I also see myself as someone who, from this mindset of always wanting to do things right, is very perfectionist and expects the same from others, and I find it very difficult to let go of certain principles or norms and values that I find important”. In the post-interview phase, however, there was a shift in the participant’s descriptions of her MBCL learning, accompanied by increased awareness of emotions and a willingness to acknowledge and accept them: “I really feel that, yes, with me at least, it’s really starting to come in, that you really experience that you really feel: this is my thing, this is me and how I deal with it, that’s something I have to learn”. Similar to Participant 80, the use of “me” is not associated with a lack of agency but, in this case, a description of finding something within oneself due to participating in the treatment.

Participant 79 is a female patient aged between 60 and 70 years, classified as being in partial remission of MDD, with a medium level of education and BDI scores of 26 before the commencement of treatment and 19 following the conclusion of treatment. She has no outlying change score levels of agency (.02), change in the mental subdomain (.04) and change in the existential subdomain (-.07). In the pre-interview she explains that she is very sensitive to criticism, social isolation and developing self-worth, while in the post-interview she shows more awareness of their daily emotional struggles and talks about growing self-compassion and resilience: “I can also have more compassion for myself because I see my struggles”. Interestingly, she shows an increase in the mental subdomain and a decrease in the existential subdomain contrary to the trend of the whole sample. This is reflected in her interviews. While there are many reflections on emotional struggle and talking about growth in the pre-interview using expressions such as “I experience myself differently”, the second text shows a more reflection on the self and interactions with others. This can be seen in expressions such as “What do people expect of me in this life. Until I found out um that I also mattered” or “I think I should be social

towards the world... we are all here together and um and we have to make do with that" tending to use more of the mental subdomain narratives.

Comparison

The outliers in the mental sub-dimension and the non-outlying participants describe similar themes in their self-descriptions which reflected in language shifts from mental to existential and action-oriented phrases. Both groups indicate that they are more aware of their feelings and needs after the intervention. The majority of participants view this as a positive outcome, which they use to identify strategies for setting boundaries and balancing the needs of others with their own. See for example 73. An exception is participant 81 who reports experiencing mood swings and a greater focus on self. The mood swings are perceived as a negative phenomenon. Participant 80, on the other hand, does not describe a focus on the self in the same way as the other participants. However, they can recognise the extent to which they are appreciated for their help, which helps to boost their self-esteem.

The differences between the two groups are not in what the participants describe, but in how they describe it. When examining the accounts of outliers and other participants, it is important to note that outliers tend to reflect more on the process of the intervention than other participants. They provide more detailed accounts of the changes that occurred during treatment, whereas other participants tend to focus on describing their current state after treatment. Generally, the review showed that in both groups a more reflective narrative style is consistent with the mental sub-dimension of experience. This is concerned with internal processes such as thinking and feeling, whereas the experiential style is more concerned with what is happening to the person telling the story. Thus, it can be argued that there is a difference between internal and external action.

Discussion

This is the first exploratory study to employ DSG to examine narrative change in participants undergoing MBCL treatment and to compare the results with those of a depression scale. DSG enabled the integration of narrative into statistical analysis, thus facilitating an exploration of changes in domains of experience, agency and their relationship to changes in depression scores. A qualitative analysis of a selection of interviews was conducted to provide further insight into the statistical findings.

The analysis demonstrated that, with regard to the first research question, there was a decrease in the mental subdomain of experience in narratives following MBCL treatment. This indicates that participants exhibited a narrative style that was less characterised by internal actions such as thinking and feeling after the treatment. Furthermore, a decrease in the mental subdomain was linked to an increase in the existential subdomain. According to Bruner (1988), people tell stories to make sense of the world, suggesting that changes in the self-descriptions of depressed people undergoing MBCL treatment are shifts in perspective on life. Thus, the findings suggest that MBCL shifts the focus of internal processes to increase awareness of the moment. The

awareness that comes from paying attention to the present moment in a non-judgmental way is a common definition of mindfulness (Kabat-Zinn & Hanh, 2009), which is part of MBCL (Van den Brink & Koster, 2015). Thus, this shift to a narrative style characterised by the experiential sub-domain could be related to mindfulness.

Furthermore, to address the second research question, there was a reduction in the level of agency in narratives following MBCL treatment, which suggests that these individuals did show less agency in the post-interview of the study. However, in the case reviews it was shown that sometimes the I/me ratio is misleading. In their self-description, participants sometimes use me to describe how their changed way of perceiving their environment and changed focus has impacted them. Thus, the change in agency perhaps is due to the reflection of participants describing the impact of the therapy on them. It is questionable that this means that they perceive now to be less agent.

With regard to the third established research question, no relationship could be observed between changes in domains of experience and changes in levels of depression. Similarly, no relationship could be observed between changes in levels of agency and changes in levels of depression, which answers the fourth research question. A post hoc power analysis revealed that the analysis with Spearman's rho did not have sufficient power, which suggests that the result might be explained by a too small sample size. As discussed in the introduction, it has been shown that individuals with the same BDI score describe different changes in experience while undergoing treatment (Angus & Kagan, 2013). This suggests that the results align with this research and that perhaps there is no direct relationship between domains of experience and levels of depression. However, that there is no relationship between levels of agency and levels of depression is not consistent with previous research on the relationship between agency and depression, which suggested that higher levels of agency go along with lower levels of depression (Muntigl, 2016; Vanheule & Hauser, 2008). However, previous research has distinguished between types of agency and depression, suggesting a relationship between high levels of agency for negative events and conversely low levels of agency for positive events. It is possible that a different operationalisation of agency could lead to different results (Adler et al., 2006; Habermas et al., 2008).

To answer the fifth research question, the case reviews that compare participants who scored highly on changes in the mental and experiential sub-dimensions reveal that participants discussed similar themes in their interviews both before and after the treatment. This was accompanied by a shift towards a descriptive style that related to the main character or object in a narrative. This might explain the observed shift to a higher level of experiential subdomain, as more sentences in the interviews included "I am ..." or "I experience ..." while there was no increase in sentences with actions related to the mental subdomain like "I think..." or "I feel ...". Those who employed a narrative style characterised by internal action primarily reflected on the processes and specific changes that occurred during the intervention, even after the conclusion of the treatment period. In contrast, other participants did not engage in a detailed examination

of the processes but rather described their circumstances at the time of the interview.

Implications

The results of this study have practical implications, as they provide insight into the tendencies of participants to shift their focus from reflexive thoughts to the here and now, which can be understood as mindfulness. It can be reasonably assumed that fostering this mindfulness is well received by some patients, which may encourage professionals to consider this when tailoring the treatment to the patients' needs. For example, using these findings to talk to patients about their experiences. Furthermore, it could assist in the implementation of the therapy and facilitate the explanation of the anticipated outcomes and make the treatment appealing to the patient.

A further implication is that the study demonstrated the feasibility of using DSG to compare changes between pre- and post-interview data from a trial testing the efficacy of a psychological intervention. It successfully extends the research of Schuling et al. (2016) by incorporating the perspective of narrative change into the findings. The use of DSG enabled the quantification of narrative themes and their comparison with the BDI scale, allowing for inferential statistics to explore the relationship between depression and narratives. By integrating qualitative analysis with DSG, the findings became more meaningful by adding context to what occurs when a person undergoes MBCL treatment.

Strengths & Limitations

There are several strengths and limitations related to the data used in the study. The sample for the interviews consists of a sample of patients that might mirror clinical practice, consisting primarily of Dutch women with a medium level of education and over 50 years of age. While on the one hand, this sample might be representative of the population of people participating in MBCL, this might not be the case for the population deviating from this. The sample thus fits the description of a WEIRD sample, which according to Henrich et al. (2010) describes a sample that is Western, educated, industrialised, rich and from a democratic society. Such samples have been criticised for biasing research towards a Western, affluent perspective and have been at the centre of criticism in positive psychology research (van Zyl et al., 2023). Thus, the results of the study might not be representative of samples from other countries, for men and higher or lower education levels.

In addition, the interviews were machine-translated from Dutch to English, which may have led to loose nuances in the language. Furthermore, Andrade and Andersen (2020) notes that DSG, being a data-driven automated algorithms that transform data from text into variables the analysis lacks theory, and the qualitative analysis of the selected interviews is also not based on a theory, the interpretation of results is not embedded in a robust framework for interpretation. However, Eronen and Bringmann (2021) stress the importance of gathering data to build robust psychology theories. Especially in research in applied psychology, exploratory data-driven research is important prior to building theory and collecting knowledge in order to bridge the

gap between theory and practise (Jebb et al., 2017).

Future Research

To improve generalisability, future research should be conducted with a bigger sample size as the power analysis showed that the power for the correlation analysis was not big enough. It should also take into account greater diversity in the population by recruiting people from different cultures, genders and socio-economic backgrounds, and by using research methods that take into account intersectionality (Bauer et al., 2021; Christensen & Jensen, 2012). This takes into account different experiences between individuals in their social location and power relations (Hankivsky, 2014). As conducting a study with such a diverse sample requires a high level of funding and effort, other methodologies such as qualitative analysis of the interviews could be conducted.

The findings of this study can be the basis for further qualitative and narrative analysis to complement and validate the findings. For example, thematic analysis or grounded theory of the interviews could be used to get a more detailed view of the themes prevalent in the interview. At the same time, other narrative elements were not explored in the present research. For example, future research could look at other aspects described by Burke (1969) pentad, such as temporality, as well as the agents present in the narratives to see if there are changes in the narratives in terms of social relations and the use of time in the narratives. Furthermore, the present study analyses agency in general, but previous research has shown that there are two different types of agency which could give a deeper understanding of the role of agency in narratives related to MBCL treatment. Furthermore, an aspect not explored in the present study, due to the limitations of the DSG, is the role of narrative coherence, which has been identified in previous research as an important feature of narratives of people with depression (Adler, 2012).

Conclusion

To the best of the authors' knowledge, the present exploratory mixed-method study is the first to use Digital Story Grammar (DSG) to examine narrative change in participants undergoing MBCL treatment and to compare it with scores on a depression scale. DSG was used to integrate narrative analysis into statistical analysis to explore changes in domains of experience, agency and their relationship to changes in depression scores. The analysis showed that after the treatment, participants' narratives were less characterised by internal action after the MBCL treatment while shifting to a style describing action related to the main character or object in a story. This narrative style is reminiscent of the mindfulness that is important in MBCL. Furthermore, there has been a decrease in levels of the agency after the treatment when compared to before. The shift in narrative focus from internal to external processes was not associated with a change in depression levels. Similarly, there was no relationship between changes in levels of agency and levels of depression observed. However, the results of this study can be used as a basis for further qualitative and narrative analysis to complement and validate the findings.

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Appendix A

Table 5
Distribution of Narrative Units

	Interview		
Participant	Pre	Post	Total
41	9 (1.0%)	20 (1.6%)	29 (1.4%)
73	19 (2.2%)	24 (1.9%)	43 (2.0%)
75	1 (0.1%)	2 (0.2%)	3 (0.1%)
79	94 (11%)	131 (10%)	225 (11%)
80	47 (5.5%)	39 (3.1%)	86 (4.1%)
81	39 (4.5%)	122 (9.8%)	161 (7.6%)
82	55 (6.4%)	62 (5.0%)	117 (5.6%)
83	98 (11%)	102 (8.2%)	200 (9.5%)
85	54 (6.3%)	41 (3.3%)	95 (4.5%)
87	11 (1.3%)	15 (1.2%)	26 (1.2%)
88	35 (4.1%)	45 (3.6%)	80 (3.8%)
89	31 (3.6%)	65 (5.2%)	96 (4.6%)
91	13 (1.5%)	55 (4.4%)	68 (3.2%)
92	24 (2.8%)	50 (4.0%)	74 (3.5%)
95	23 (2.7%)	21 (1.7%)	44 (2.1%)
96	80 (9.3%)	169 (14%)	249 (12%)
97	25 (2.9%)	26 (2.1%)	51 (2.4%)
98	25 (2.9%)	71 (5.7%)	96 (4.6%)
102	12 (1.4%)	33 (2.6%)	45 (2.1%)
106	47 (5.5%)	45 (3.6%)	92 (4.4%)
107	19 (2.2%)	17 (1.4%)	36 (1.7%)
108	38 (4.4%)	31 (2.5%)	69 (3.3%)
112	19 (2.2%)	37 (3.0%)	56 (2.7%)
113	41 (4.8%)	26 (2.1%)	67 (3.2%)
Total	859 (100%)	1,249 (100%)	2,108 (100%)
Mean (SD)	27 (23)	42 (37)	36 (33)