



Developing an observing attitude: A qualitative analysis of meditation diaries in a MBSR clinical trial

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15 Developing an observing attitude: A qualitative analysis of meditation diaries in a MBSR
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18 clinical trial

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For Peer Review

Key Practitioner Message:

This article

- Analyzes the ways in which participants in a mindfulness based stress reduction clinical trial describe their experiences with mindfulness practice
- Carries out qualitative analysis of the ways in which participants' descriptions of home-based meditation practice contained in their practice diaries *change* over the course of a 8-week mindfulness based stress reduction trial
- Demonstrates that the participants who successfully completed the 8-week course show a common developmental trajectory, as each participant used less reactive, judgmental language to describe their home meditative practice-based experiences by the end of the trial, even when, in the case of some participants, that experience was perceived as negative or distressing
- Suggests that progress in MBSR may rely less on the valence of participants' experience and more on the way participants describe and relate to their own inner experience.

Keywords: mindfulness, MBSR, meditation, randomized controlled trial, qualitative, observing self

Abstract

Mindfulness-based stress reduction (MBSR) is an 8-week training that is designed to teach participants mindful awareness of the present moment. In randomized clinical trials (RCTs), MBSR has demonstrated efficacy in various conditions including reducing chronic pain related distress and improving quality of life in healthy individuals. There have, however, been no qualitative studies investigating participants' descriptions of changes experienced over multiple time-points during the course of the program. This qualitative study of a MBSR cohort (N=8 healthy individuals) in a larger RCT examined participants' daily diary descriptions of their home-practice experiences. The study used a two-part method, combining grounded theory with a close-ended coding approach. The grounded theory analysis revealed that during the trial, all participants, to varying degrees, described moments of distress related to practice; at the end of the course, all participants who completed the training demonstrated greater detail and clarity in their descriptions, improved affect, and the emergence of an observing self. The closed-ended coding schema carried out to shed light on the development of an observing self, revealed that the emergence of an observing self was not related to the valence of participants' experiential descriptions: even participants whose diaries contained predominantly negative characterizations of their experience throughout the trial were able, by the end of the trial, to demonstrate an observing, witnessing attitude towards their own distress.

Conclusion: Progress in MBSR may rely less on the valence of participants' experiences and more on the way participants describe and relate to their own inner experience.

Introduction

Mindfulness is said to involve experiential awareness of the present moment (Kabat-Zinn 2003). By focusing on the present moment, individuals become aware of sensations, emotions and thoughts that arise in the mind without judgment, evaluation, or avoidance. The practice of cultivating mindfulness originated over two millennia ago in Asian Buddhist traditions. In recent years, mindfulness practice has been incorporated into mental and physical healthcare settings through various approaches (Baer 2003; Brown 2003; Bishop 2004; Brown, Ryan et al. 2007). These include Dialectical Behavior Therapy (Linehan 1993), Acceptance and Behavior Therapy (Hayes, Strosahl et al. 1999), Mindfulness-Based Cognitive Therapy (MBCT) (Segal, Williams et al. 2002), and Mindfulness-Based Stress Reduction (MBSR) (Kabat-Zinn 1990).

The present paper focuses specifically on MBSR. MBSR is an 8-week, stress-reduction program that involves three techniques (body scan, sitting meditation, and yoga). Kabat-Zinn explains that the purpose of the 8 week program is to teach participants how to “pay attention in a particular way: on purpose, in the present moment, and non-judgmentally.” By learning to cultivate present-moment awareness, practitioners are described as becoming more mindful of their thoughts, emotions, sensations, and overall sense of self.

In clinical trials, MBSR has been demonstrated to reduce suffering in patients in many different disease conditions. It reduces stress and fatigue and improves pain and mood in serious physical illnesses including cancer (Carlson, Speca et al. 2003) rheumatoid arthritis (Pradhan, Baumgarten et al. 2007) and HIV-AIDS (Creswell, Myers et al. 2009). It has been shown to improve prognostic variables (Ramel, Goldin et al.

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3 2004) and improve treatment outcomes (Marcus, Schmitz et al. 2009) in various mental
4 illnesses. It improves pain-related affect, distress, and, in some cases, pain intensity, in
5 several different types of chronic pain (Plews-Ogan, Owens et al. 2005)(Lush, Salmon et
6 al. 2009) (Grossman, Tiefenthaler-Gilmer et al. 2007) (Morone, Lynch et al. 2008)
7 (Plews-Ogan, Owens et al. 2005). Physiological mechanistic studies have shown MBSR
8 to modulate brain (Farb, Segal et al. 2007) (Davidson 2003) and immune function
9 (Davidson 2003); one small randomized study showed MBSR to moderate the decline of
10 CD4+ T lymphocyte counts in adults infected with HIV-1 (Creswell, Myers et al. 2009).
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22 In addition, MBSR robustly improves quality of life and decreases stress in
23 healthy individuals. See for example (Shapiro, Oman et al. 2008) (Klatt, Buckworth et al.
24 2009) (Nyklicek and Kuijpers 2008). These effects are seen in sub-populations including
25 adults in stressful occupations (Cohen-Katz, Wiley et al. 2005), adult caregivers of
26 Alzheimers patients (Epstein-Lubow, Miller et al. 2006), and elderly residents of an
27 assisted living facility (Ernst, Welke et al. 2008).
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36 While the efficacy of MBSR has been demonstrated through numerous clinical
37 trials, the mechanism that is specific to the intervention underlying its therapeutic effect
38 remains unclear. Several cognitive mechanisms have been proposed. Teasdale has
39 suggested that mindfulness may help some people develop “metacognition” (the
40 awareness of one’s own thoughts as thoughts); by learning to become aware of one’s own
41 “thought-stream,” the tendency to ruminate on negative experiences is reduced. By
42 developing metacognition, Teasdale suggests practitioners can “uncouple” their
43 awareness of internal experience from their own negative judgments about that
44 experience. More recently, (Shapiro, Carlson et al. 2006) have proposed “reperceiving”
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3 as a meta-mechanism related to mindfulness. Reperceiving is a transformation or “shift in
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5 perspective” that involves disidentifying oneself from one’s experiences to observe them
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7 without reaction or judgment. Through the process of reperception, individuals are able to
8
9 simply be with their thoughts, feelings, and emotions rather than being defined by them.
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12 Reperceiving is made up of three components: Intention, Attention and Attitude.
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15 Intention is defined as the reason (the “why”) or motivation for practice. Attention is the
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17 mental focus of the practice (the “what”) that one studies— one’s moment-by-moment
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19 internal experience. Attitude is the quality of mind that one brings to the practice (the
20
21 “how), which according to Kabat-Zinn, should be open-minded and without judgment.
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25 When these three functions are combined, the proposed “reperceiving” mechanism comes
26
27 in to play.
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30 According to (Shapiro, Carlson et al. 2006), “reperceiving” helps to decrease the
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32 inflexible and reflexive patterns of *reactivity* that result from being overly attached to
33
34 one’s experience. Reactivity or automaticity involves responding to experiences with
35
36 reactive thoughts, emotions, and behaviors triggered by prior conditioning and habits.
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38 Through reperceiving, one will be able to “disidentify” from present experiences, view
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40 them from a novel, “observing” vantage point, and reduce reactivity. This new vantage
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42 point is similar to Deikman’s “observing self” (1982). From this new vantage point, one
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44 is said to be able to observe present experience more objectively and in turn, respond
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46 with greater consciousness and somatic, cognitive, and emotional flexibility.
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50 *Our Approach*

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53 Authors of each of the hypothesized mechanisms propose that over time,
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55 mindfulness practice elicits tangible changes in the individual’s relationship to his or her
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3 own internal experience. Currently, however, although there are excellent first-person
4 accounts of MBSR in several interesting qualitative studies (Mason and Hargreaves 2001;
5
6 Dobkin 2008; Morone, Lynch et al. 2008), qualitative, first-person descriptions of
7
8 experiential changes related to the process of change in mindfulness practice *carried out*
9
10 *across multiple time-points during an MBSR trial* do not exist. These descriptions would
11
12 provide insight into the processes underlying the changes that practitioners may
13
14 experience and should also help to generate hypotheses for quantitative research
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16 methods.
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22 This study conducted a two-stage content analysis of meditation diaries written
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24 during participants' participation in a larger MBSR clinical trial. The first stage involved
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26 the qualitative technique of grounded theory. Grounded theory emphasizes developing a
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28 theory that is grounded in the commonalities and differences of the data itself (Abba,
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30 Chadwick et al. 2008). Developing this theory involved systematically and iteratively
31
32 linking analysis with data collection to understand common concepts and their
33
34 relationships (Glaser and Strauss 1967). The second stage of this study involved
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36 combining the emergent theory with discussions of the mechanism described above. In
37
38 both parts of the analysis, the focus of this qualitative study is on the processes and
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40 trajectory of change in practitioners' descriptions of their internal experience in MBSR.
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45 *Use of diaries*

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48 Solicited diaries are the primary data source on which a grounded theory analysis
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50 will be carried out. Diaries were chosen as the qualitative data-source because they
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52 provide space for participants to depict their own experiences in their own language
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54 (Milligan, Bingley et al. 2005). While diaries may unavoidably be written with a certain
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3 agenda in mind, they are generally unstructured and allow participants to reflect and
4
5 record their behaviors, thoughts, and experiences. Further, diaries provide a useful
6
7 measure to capture the specific emphases individual participants place on different events
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9 and difficulties in their lives as well as the routine and everyday processes that may be
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11 viewed as trivial and not recorded otherwise (Verbrugge 1980). While it may be hard for
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13 quantitative measures to trace events over time, diaries, by capturing individuals'
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15 thoughts close to when they occur give us insight in to participants' immediate
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17 experiences of their practice as they change over time. The diaries also allow us to see
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19 changes, not only in the content of what people are experiencing when they practice but
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21 also in the formal semantic structure that they use to describe their experience.
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28 **Methods**

29 ***Participants***

30 *Clinical Trial Participants*

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32 The participants whose practice diaries are analyzed here were members of one
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34 cohort of a larger clinical trial, designed to test the effect of MBSR on brain dynamics
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36 related to attentional processing (Kerr et al., *in prep*). Participation was solicited through
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38 an internet-based informational web site local to Boston (CRAIGSLIST Boston) and
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40 through paper posters hung on public bulletin boards in Cambridge and Somerville, MA.
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42 Eight healthy females agreed to participate in the MBSR course and fill out daily diaries
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44 of their experiences. Out of the 8 initial participants who registered for the course, 7
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46 successfully completed the intervention and 1 participant dropped out of the course after
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48 week 3. The clinical trial was registered with an approved international clinical trials
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50 registry (Clinicaltrials.gov) and was approved by the ethics boards of Massachusetts
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3 General Hospital and Harvard Medical School. All participants signed a consent form
4 agreeing to participate and consenting to the use of all data, including study diaries, for
5 research purposes. The average age of the participants was 31 (sd 5.25). All participants
6 were women; five were white; two were Hispanic; one was Asian-American.
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10 11 12 *Participants for journal entry analysis*

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15 Five participants out of the seven participants who completed the course wrote
16 diaries throughout the course. These participants include: 1, 2, 3, 4, and 5. Because
17 diaries for week 8 were not available for any of the participants, only entries from weeks
18 1 through 7 were analyzed. Participant 1, 2, and 4 recorded diaries for all 7 weeks.
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20 Participant 3 submitted diaries for the first 6 weeks and Participant 5 submitted diaries for
21 weeks 1, 2, 3, and 6.
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29 *Intervention*

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32 Participants met once every week for 8 weeks for a 2-2.5 hour session. The
33 sessions were led by a meditation instructor who was certified in MBSR and had 10 years
34 of experience. Following week 5, there was an all-day, silent, mindfulness retreat.
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36 Below is a week-by-week outline of the MBSR intervention.
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40 *Weeks 1 and 2*

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43 The body scan technique was introduced during week 1 of the MBSR course.
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45 Participants are told to lie down on their backs in a comfortable place. They were asked
46 to mindfully shift their attention up from their toes to every body part until they reached
47 the top of their head. As participants focused on each body part, they were told to feel
48 any and all sensations occurring in the area and then with an intentional breath, move on
49 to the next body part. They were instructed to practice the body scan for 45 minutes a
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3 day, 6 days per week, for at least 2 weeks straight in the beginning of the MBSR course.

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5 In addition, participants were encouraged to informally practice incorporating
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7 mindfulness into routine activities such as waking up in the morning, showering, eating,
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9 etc.

10 11 12 *Weeks 3 and 4*

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15 Beginning in week 3, participants started alternating the body scan each day with
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17 yoga. They were also asked to start practicing sitting meditation or mindfulness of
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19 breathing for fifteen to twenty minutes every day. For informal practice during week 3
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21 and 4, participants were urged to become aware of one pleasant and unpleasant event that
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23 occurs each day.
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26 27 *Weeks 5 and 6*

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29 Participants were asked to discontinue the body scan for a while and replace it
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31 with longer sitting meditation sessions (up to 45 minutes at a time). They were told that
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33 they can sit the whole time focusing solely on their breathing or can gradually expand
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35 their field of awareness to include bodily sensations, sounds, and thoughts and feelings.
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37 During weeks 5 and 6, participants alternated 45 minute sitting meditation sessions each
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39 day with yoga practice.
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43 44 *Weeks 7-8*

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46 Participants were told to practice without the tapes if possible. They were asked to
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48 devote a forty-five minutes every day to a combination of sitting meditation, yoga, and
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50 body scan. They were encouraged to experiment and try different combinations although
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52 it was also acknowledged that some participants who did not yet feel ready to practice
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54 without the tapes would continue to use the recordings to guide practice.
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Diaries

Participants were asked to keep daily practice logs with the amount of time they spent doing the techniques of body scan, sitting meditation, or yoga. On the practice logs, there was a space where practitioners were asked to give open-ended comment on their experiences during meditation practice. Importantly, rather than being directed to focus on particular aspects of their experience, they were asked to write a brief report (1-3 sentences) immediately following practice describing whatever aspect of their practice experience seemed most important to record at that moment. These comments on the practice diaries are the qualitative data described and analyzed here.

Analytic Approach

A mixed approach involving grounded theory and an observational coding scheme was used to analyze participants' diaries of their experiences during the MBSR course.

Part 1: Grounded Theory: The diaries were transcribed and reviewed by two coders. Following grounded theory methodology, coding was done iteratively. The first round of coding was carried out by a researcher (KJ), who was otherwise unconnected to the clinical trial. In the first round of coding, the primary coder independently reviewed the data using content analysis to identify key themes and concepts that were similar across all of the subjects in the study. Additional data was developed using computer word-count analysis to identify recurring words characteristic of each participants' diary entries. A count of the average number of words in each diary entry was also performed. All key themes and word count data were sorted for each subject and overarching categories were created. A second coder who is an experienced qualitative researcher

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3 (Kerr 2002) (Stone 2005) carried out independent coding of the data set. An iterative
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5 process ensued with multiple meetings in which differences between coders were
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7 discussed and resolved and memoranda were written to further clarify the common
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9 themes found in the diary entries of all five practitioners who completed the MBSR
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11 course and submitted multiple diary entries from each phase of the course. From this
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13 analytic method, three main themes were identified and a theory about the effects of the
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15 MBSR course on practitioners emerged (see results, section 1). Based on these themes
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17 and the emerging theory, summaries of trajectories of change for each participant were
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19 described (see part 1 in the results section).
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25 A specific commonality that emerged in the grounded theory analysis became the
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27 subject of interest for the second part of the analysis: all of the MBSR participants who
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29 completed the course demonstrated emergence of an observing self at the end of the
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31 course. This finding was particularly intriguing because it seemed to closely parallel the
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33 reperceiving mechanism hypothesized by Shapiro, Carlson et al. (2006). For the purpose
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35 of exploring the trajectory of reperceiving over the course of the study to look at when it
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37 emerged and its constituent components, we created an observational based on specific
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39 factors described by Shapiro, Carlson et al. (2006).
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45 Observational Coding Scheme: Using factors described by Shapiro, Carlson et al.,
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47 (2006), an observational coding scheme was developed in order to parse each subject's
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49 diary descriptions to (1) itemize every description of reperception and (2) itemize every
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51 description of "reactivity" for each subject. This secondary coding task was carried out
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53 by coder 1, with coder 2 validating the coding by applying the scheme to the diary data to
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55 confirm the results. The purpose of the observational coding scheme was to track the
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3 development of the observing self during the course. The coding scheme was used to
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5 separate re-perceptive statements from reactive statements. Statements in the diaries that
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7 matched coding scheme criteria (nonjudgmental, without identification, without reaction,
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9 intimate, meta-awareness) were characterized as re-perceptions. Statements not
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11 characterized as re-perceptions were classified as reactive or ambiguous. Reactive
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13 statements involved judgment and identification combined with reactionary thoughts,
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15 emotions, and behaviors. In identifying reactive statements, the valence of the statement
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17 is not important, but rather the vantage point from which one reports the statement. A
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19 statement that is not reported from an observational vantage point is considered to be
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21 reactive. However, because there were very few reactive statements of positive valence
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23 contained in the diaries and because of the high clinical significance of negative
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25 reactivity hypothesized by Shapiro, Carlson et al. (2006) and others (as reactivity may be
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27 related to constructs such as rumination and worry that, in certain forms, may signal the
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29 presence of psychopathologies such as anxiety or depression) only statements that
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31 displayed negative reactivity were recorded and studied. For each participant, the unique
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33 trajectory of re-perceptive, reactive, and ambiguous statements was studied.
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40 41 **Results**

42 43 Part 1: Grounded theory analysis.

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45 A content analysis of the practice diary entries was performed to identify key
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47 themes and concepts that were similar across all of the subjects in the study. Additional
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49 data including diary submission rate, recurring words in the diary entries, average word
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51 count per day, and average practice time per day was also obtained for each participant
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53 (see Table 2). Each participant demonstrated a unique experiential trajectory, as can be
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3 seen in the varying somatic, cognitive, and emotional descriptions of practice experience
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5 contained in the practice diaries with some practitioners experiencing significant
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7 difficulty and distress at different times in the course. However, towards the end of the
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9 MBSR course, certain commonalities emerged. Notably, the descriptions of each
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11 participant showed greater clarity, detail, and less generality in the diary entries collected
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13 from weeks 6-7. In addition, when compared with the first five weeks, the diary entries
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15 from weeks 6-7 for each participant showed improved affect. Perhaps the most
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17 noteworthy commonality was that all participants progressed, to some degree, in
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19 developing an observing attitude towards their own experience (see description of
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21 trajectories below, Table 3).
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29 ***Part 2: Observational coding schema results: Reperception and Reactivity.***
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32 As noted above, by the end of the trial, participants reported more positive
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34 feelings and also demonstrated emergence of an observing self towards their experience.
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36 In order to specify more precisely the trajectory of each participant's development, the
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38 systematic coding scheme described above was applied to the diaries based on the
39
40 general construct of *reperceiving*.
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44 Application of the coding scheme revealed that

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46 • In all of the participants that completed the course, there was an
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48 improvement in reperception from the beginning to the end of the course.
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50 • This increase in reperception was characterized by either less negative
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52 reactivity or an increase in meta-awareness. In the diary entries, this meta-
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54 awareness involved writing from a distinct vantage point in which
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3 participants actively stood back from the particular content of experience
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5 in order to clearly note their awareness of awareness itself (as when
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7 participant 1 notes, immediately after practicing in week 7, “Focused on
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9 connected to my bed as I lay, only thinking of this moment.”) (Shapiro,
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11
12
13 Carlson et al. 2006)

- 14
15 • Several participants experienced a “spike” in reactivity mid-way through
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17 the trial that was followed by a marked increase in diary entries that were
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19 characterized as re-perceiving (ie., not judgmental, reactive or identifying
20
21 the self with the experience being commented on) suggesting that that
22
23 negative reactivity mid-way through the course may catalyze later
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25 improvements in re-perception.
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29 Table 4 describes the dynamic inter-relationship between re-perceiving and reactivity.
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31 32 **Discussion**

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34 This study combined a grounded theory approach (part one) with a close-ended
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36 coding approach (part two) to examine individuals’ trajectories of development over the
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38 course of the 8-week study.
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41 The first analysis using grounded theory discovered that all participants
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43 experienced some distress or difficulty at various points in the course and that each
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45 participant had her own unique trajectory of somatic, cognitive, and emotional
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47 experiences. Furthermore, certain commonalities, especially in participants’ experiences
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49 in the final week of the course emerged:
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53 • Each participant displayed greater clarity, detail, and less generality in the
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55 diary entries collected from weeks 6-7.
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- Compared with the first five weeks, the diary entries from weeks 6-7 for each participant showed improved affect compared to the beginning of the course.
- By the end of the course, all participants developed, to some degree, an *observing self* towards their experience,

These results correspond to processes described by Shapiro, Carlson et al. (2006), who hypothesized that a perspectival shift might accompany mindfulness practice that would allow a person to step back and “reperceive” their own experiences in a less reactive and judgmental way.

The second analysis used a closed-ended coding scheme based on Shapiro, Carlson et al.’s (2006) detailed definition of *reperception* to investigate how and when emergence of an observing self occurs in each practitioner. Application of the coding schema revealed a dynamic tension in participants’ diaries between descriptions of practice that were non-judgmental, non-reactive and non-identifying, which were coded as *reperceiving*, and descriptions of practice that were reactive to the practice experience being described.

This formal analysis revealed some important additional information about how the emergence of *reperception* is associated with a change in one’s relationship with one’s own experience. Specifically, we found that increases in *reperception* were not necessarily associated with a change in the valence of experience. This dissociation of the valence of the contents of experience (e.g., positive versus negative) from one’s attitude about these contents can be seen most clearly in *participant two*. The content of *participant two’s* diaries is almost unrelentingly negative. Participant 2 begins the course

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2
3 describing the pain in her body and ends the course in the same way. However, when one
4 studies changes in *the way that she reports her experience*, significant progress is
5
6 evident. Thus, while she begins the course with descriptions such as “Felt pain in lower
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8 back, felt fat and gross,” she ends the course with statements such as “Pain in many parts
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10 of body. Difficulty with thoughts.” Crucially, the content of her descriptions has not
11
12 changed; rather, her attitude towards the experience has changed significantly. Participant
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14 2 started the course with reactivity, judgment, and identification with her experiences.
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16 She ends the course by being able to simply observe her negative experiences of pain and
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18 distress.
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25 The trajectory of Participant 2 also illustrates the idea that developing an
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27 observing self may not be an easy path, free from difficulty or negative reactivity. Since
28
29 mindfulness requires direct confrontation with one’s sensations, thoughts, and feelings, it
30
31 can be difficult in the beginning. For example, during week 1, Participant 2 writes “I felt
32
33 kind of gross and fat while focusing on my abdomen and pelvis.” Even though she is
34
35 trying to view her abdomen and pelvis non-judgmentally, she finds it difficult not to have
36
37 negative reactions. Similarly, participant 2 even goes so far as to state about practice, in a
38
39 middle week of the study, “I hated this” and “Desire for it to end” in reaction to the
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41 experiences that she confronts during MBSR. It is intriguing that participant 2’s reactivity
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43 in the middle of the course was followed by a later change in attitude as her descriptions
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45 of practice become less reactive and involve more re-perceiving. Indeed, one might
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47 conjecture that in some participants, such as participant 2, severe periods of negative
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49 reactivity may actually help catalyze re-perceiving processes related to the emergence of a
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3 more robust observing-self in the final weeks of the course due to greater intimacy with
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5 one's experience.
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8 In addition to this dynamic tension between re-perceiving and reactivity, the
9
10 coding analysis also revealed that some of the subjects whose trajectory of development
11
12 did not contain highly reactive or distress-laden periods also experienced, in the final
13
14 weeks of the course, an increase in the ability to manifest an observing self. Participant 4,
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16 for example, is unique in this study in that her descriptions contain very little negative
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18 content after the first week, after which she seems to enter a re-perceiving process fairly
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20 seamlessly (all of her entries after week 1 are positive, non-judgmental, non-reactive
21
22 detailed descriptions of practice). In other words, from the perspective of content
23
24 analysis, based on the unvaryingly positive content of her practice diary there appears to
25
26 be little progress after the first week. Yet, the coding scheme reveals important progress
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28 in her development of an observing self in the final week of the course, when her
29
30 descriptions suddenly acquire a quality of meta-awareness. Meta-awareness occurs when
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32 one actively stands back from one's experience and *shifts one's identity from the contents*
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34 *of awareness to awareness itself*. While participant 4's re-perceptions in week 5 of the
35
36 course contain items such as "When walking at normal pace was better able to both walk
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38 and breathe more naturally," her re-perceptions at the end of the course are framed by her
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40 statements about awareness: "Focused on my breathing and on the feeling of the wind on
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42 my body and was aware of the sounds of the waves." Even though the valence of her
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44 experience has not changed over the course of the trial, Participant 4 demonstrates
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46 progress in re-perceiving throughout the course with continued mindfulness practice. By
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48 the last weeks of the study, Participant 4 is aware of awareness itself.
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3 The coding analysis also suggests that persons with a fragile relationship to their own
4 internal experience might be more likely to drop out of a mindfulness clinical trial. Here
5 again, a simple content analysis of the study's sole drop out, Participant 6, reveals little,
6 showing only rather simple entries that alternate between a positive and negative valence.
7 While the exact reasons for dropping the course are unknown, diary entries including one
8 in which she states that in addition to feeling "blubbery," and "out of shape," she feels
9 "self-conscious" suggest that even in a private practice setting at home she imagined
10 being watched by others rather than focusing on her own internal experience during
11 meditation. Her last entry written before dropping out, "Not wishing I could think "I'm
12 wasting my time," indicates an especially incoherent relationship with both the MBSR
13 course and her own internal thought processes.
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29 By teaching healthy adults to simply observe their experiences without reaction,
30 attachment, or judgment (i.e., to re-perceive), MBSR may reduce everyday negative
31 reactivity. This simple shift towards an "observing self" may be the mechanism enabling
32 the more global changes in perspective reported by many MBSR participants. What is
33 notable about this shift is that self-reports about the valence of one's experience appear to
34 matter less than the attitude or relationship that one has towards one's experience
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43 This change in attitude and the perspectival shift that accompanies it may be
44 especially relevant for patients suffering from affective and chronic pain disorders.
45 For patients suffering from affective disorders such as depression and anxiety developing
46 a compassionate relationship to one's experience is fundamental to breaking the
47 ruminative and catastrophizing loops that are often present in these disorders. By
48 observing these ruminative and catastrophizing cognitions nonjudgmentally, patients
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3 begins to strengthen their “observing selves” (Deikman, 1982) and realize that their
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5 negative thoughts and depression are not really them. Teaching the process of
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begins to strengthen their “observing selves” (Deikman, 1982) and realize that their negative thoughts and depression are not really them. Teaching the process of re-perceiving may be useful for the treatment of physical illnesses, as well as for improving the quality of life of healthy individuals. For patients suffering from chronic pain disorders such as fibromyalgia, chronic back pain, arthritis, or chronic headache/migraine, exposure to MBSR may help them to observe their pain without reacting. By not reacting to the pain, patients may be able to live fulfilling lives despite the illness. If patients suffering from chronic pain disorders such as fibromyalgia, chronic back pain, arthritis, or chronic headache/migraine are exposed to MBSR, they may be able to strengthen their “observing self” and turn their pain from “subject” into an “object” that is separate from their identity. Through this process, they will begin to realize that “this pain is not me” and be able to improve their quality of life.

One last point to consider is the foundational role that somatic re-perception appears to play as participants’ diary entries change over the course of the trial. While somatic, cognitive, and emotional processes were present in the all of the diaries, somatic processes were fundamental to the diary entries in a majority of the participants across the trial. It seems as though participants found the task of developing an observing perspective easier to carry out when focused on somatic sensations, perhaps because the body feelings that they focused on were so concrete and tangible. Slowly, over time, it seems participants were able to translate the practice of observing body feelings non-reactively without judgment and identification to their thoughts and feelings.

For some of the participants in the trial, the process of developing somatic re-perception was quite complex and challenging. Consider this diary entry from

Participant 5, who reported in week 2, after completing a body scan meditation that she “had emotions of anger in pelvic area, happiness in stomach, and sadness to the point of crying in my hands” Here we see a complex blend of affective and somatic descriptions that is difficult to decode. One way to understand the foundational importance of body-focused practice in MBSR is to consider the proposal by some researchers that core affective processes emerge from a readout of the deep somatic internal sensations that form our basic bodily experience (Feldman Barrett 2005; Barrett, Mesquita et al. 2007). Recent neuroscientific studies of mindfulness re-enforce this idea that brain areas dedicated to body representation (primary somatosensory cortex) and body awareness (right anterior insula) may underpin the increased experiential access to the self seen in meditators (Farb et al 2007). These areas are actually structurally thicker in advanced mindfulness meditators than they are in controls (Lazar 2005), suggesting enhanced processing in these areas is associated with mindfulness.

Limitations

There are serious limitations to the generalizations one can draw from this study. One major limitation is the inherently restrictive format of the diaries themselves. While diaries provide an open space to record behaviors, thoughts, and experiences, certain processes of re-perception may not have been captured since there were no specific guidelines. Further, some cryptic statements that appear to refer to emotional and cognitive states were oftentimes hard to categorize in terms of re-perception or reactivity. Somatic statements were easier to categorize because the statement typically captured a fuller representation of the somatic experience. Emotional and cognitive statements were vaguer in terms of their meaning. For example, the statement, “Relaxed, stretched,

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3 happy” was hard to classify because it does not capture a full description of the
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5 participants’ mental state. Another hard to classify type of statement were those that
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7 “mixed” re-perceiving and reactivity. Consider an example of this type of statement:
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9 “Clearly I am beyond exhausted, I probably don’t feel it as long as I am moving but when
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11 I stop, I’m out.” This statement has two clauses strung together and it is unclear whether
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13 the statement signifies re-perception or reactivity.
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17 Another limitation was that diary entries for the entirety of the course were only
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19 present for 5 participants. If diaries had been present for a bigger sample, a common
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21 trajectory of re-perception processes may have been observed. Second, diary entries were
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23 only available for weeks 1-7 and not for week 8. An absence of diaries for week 8 makes
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25 it hard to comment on the participants’ final state of mind. In addition, all of the
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27 participants did not consistently turn in diary entries every day of the course. While some
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29 participants turned in entries every day, others turned in entries 3-4 times per week. In
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31 future studies, submission of diaries should be more strictly monitored.
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36 **Conclusion**

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38 The present study utilized practitioners’ experiential diaries to track the emergence of an
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40 observing self over the course of MBSR. While one might think that development of an
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42 observing self would be dependent on the valence of participants’ meditative
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44 experience, this qualitative analysis suggests a new way of defining progress. We found
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46 that progress in MBSR may rely less on the valence of participants’ descriptions of their
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48 experience and more on the way participants describe and relate to their own inner
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50 experience. For example, while statements such as “Felt pain in lower back, felt fat and
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3 gross” and “Noticed pain in knee and lower back” both have to do with pain, the latter
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5 statement manifests an “observing” attitude that the participant brings to her pain.
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8 This redefinition of progress in MBSR as *developing an “observing” attitude and*
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10 *relationship towards the illness rather than changing the illness itself* may be useful for
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12 investigators planning trials in clinical populations. Knowing that progress in MBSR is
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14 fitful, with periods of distress frequently arising in the middle of the trial may also be
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16 important for understanding compliance and dropout in MBSR (Santorelli, director of
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18 the Center for Mindfulness where MBSR was developed, describes possible salutary
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20 forms that this distress can take in greater depth in (Santorelli 2008)]. Knowing that
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22 “progress” in MBSR may not be associated with an increase in positive (or a decrease in
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24 negatively) valenced experience could be informative for future researchers. What this
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26 study suggests is that progress in MBSR mainly reflects changes in the ways participants
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28 describe and relate to their own inner experience. In future studies, an objective coding
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30 schema may be useful for capturing the development of the observing self in MBSR more
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32 quantitatively.
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Tables

Table 1. Final reperception coding scheme with examples and counterexamples

Nonjudgmental: Does not include analysis, questioning, or comparison to past experience.

Example: “Difficult to focus in the beginning, felt very relaxed and focused by the end. Less judgment today”

Counterexample:* “Irritating thoughts of past conflict with a co-worker who really got under my skin—dwelling on the past”

Without Identification: No endorsement of an “I am” statement as the truth. No attachment should be present.

Example: “More aware of all my thoughts, practiced watching them go by like clouds”

Counterexample:* “I felt kind of gross and fat while focusing on my abdomen and pelvis”

Without Reaction: Depends on the context of the statement. Look at statement preceding and following to see if there is judgment or reaction to experience.

Example: “Became cold and disoriented when I fell asleep”

Counterexample:* “Pain in knee that don’t normally notice. Desire for it to end”

Intimacy: There should be detail and a high level of “closeness” to the experience.

Example: “Could feel waves of tingling/pressure on toes, feet, legs, but not back”

Counterexample:* “Did not like slow and fast walking meditation”

Meta-Awareness: Involves actively standing back from one’s experience and shifting one’s identity from the contents of awareness to awareness itself.

Example: “Was aware of the wind hitting the different part of my body”

Counterexample:* “Felt blubbery, felt self-conscious, out of shape”

* *Examples of reactivity*

Table 2. Additional data of participants that completed the MBSR course

Participant #	Commonly used words	Diary entry submission (%)	Average Word Count/Day	Average MBSR Practice (min)/Day
1	Abdomen, tense, tired	100	24.49	67.55
2	Pain, distracted, lower back, knee	65.31	15.21	35.49
3	Fatigue, tired, work	51.02	7.92	33.43
4	Relaxed	69.39	26.29	32.12
5	Relaxation	22.45	23	33.08

Table 3. Trajectory of experience in participants who completed and dropped the MBSR course

Participant 1

Participant 1 begins the course with a “monkey mind” and has trouble focusing her thoughts and being in the present. Her main source of difficulty during the body scan is her abdomen, which “almost feels like vibes from a strong power cable.” Gradually, participant 1 begins to view her abdomen with greater clarity, focus, and objectivity. She notices how “how dense and connected the muscles are from belly through chest” and discovers ways to relax her muscles. Once sitting meditation is introduced in week 3, observation of her mental state begins along with cognitive and emotional difficulty. Self-pressure and self-judgment fills her mind, leading to mental and physical exhaustion, and finally to frustration and insecurity. The peak period of difficulty for participant 1 occurs in week 5. She feels the desire to “quit and move to the Bahamas or someplace with a different pace.” In the middle of week 6, difficulty for participant 1 decreases and she starts to find comfort in yoga, using it as a way to re-energize her mind and body. By week 7, participant 1 appears to be a changed individual as she writes how during practice she “focused on connecting to my bed as I lay, only thinking of this moment.”

Participant 2

Participant 2 begins the course with a strong awareness of certain parts of her body and a strong unawareness of other parts of her body as well as somatic difficulty. She experiences pain in her knee and lower back and writes that “I felt kind of gross and fat while focusing on my abdomen and pelvis.” At the same time, she has an “inability to

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feel most parts of her feet.” By week 2 of the body scan, participant 2 develops a greater sense of awareness and is “more able to feel certain body parts, like parts of legs.” When sitting meditation and yoga are introduced, participant 2 continues to give somatic descriptions. She notices the noises that her stomach makes, the twitching of her muscles, and the tension in her shoulders and stomach during various body positions. The peak period of difficulty for participant 2 occurs in week 5. She is affected by the pain she feels and writes comments such as “Desire for it to end” and “I hated this.” By week 7, participant 2 still reports “pain in many parts of the body” as well as “distracting, difficult thoughts,” but there is no judgment associated with the statements.

Participant 3

Participant 3 begins the course with racing thoughts and writes that it is “hard to turn my mind off.” Her peak period of difficulty occurs in week 1 of the course characterized by cognitive and emotional suffering. She also dwells on the past a great deal and writes a salient entry about having “irritating thoughts of past conflict with a co-worker who really got under my skin.” During the body scan, participant 3 displays somatic difficulty by describing how she feels itchy and uncomfortable. When sitting meditation and yoga are introduced, she continues to have difficult thoughts about work, combined with itchiness, restlessness, and exhaustion. Participant 3 is finally “able to relax and focus on breathing” during week 5 even though she feels fidgety and tired. She describes how she is “happy for the time to not do anything” and writes “more aware of all my thoughts, practiced watching them go by like clouds.” By week 6, participant 3 is “very peaceful and happy to be in class” and “happy to not be at work” and it seems as though she has somehow found a way to be content.

Participant 4

She begins the course feeling “cold and hungry” and very uncomfortable. Her peak period of difficulty occurs in week 1, characterized by somatic difficulty. As participant 4 begins the body scan, subtle details about her body catch her attention. She writes how her “nostrils felt very cold when breathing” and “really liked the image of breathing through different parts of my body and through the whole body at the end.” With the introduction of sitting meditation, participant 4 continues to record somatic experiences. She repeatedly describes how she is exploring and observing different sensations in her body. When yoga is introduced, participant 4 records cognitive experiences when she is able to track her progress and notices an improvement in her “ability to breathe freely when engaged in different/muscle tensing position.” Emotional experiences are recorded towards the end of the course when participant 4 describes how she feels happy, rested, and relaxed.

Participant 5

Participant 5 begins the MBSR course feeling “deep relaxation” and at the same time “tension and tingling.” She writes that the “tension centers around the lower middle back of my pelvis” and that she “could feel waves of tingling/pressure on toes, feet, legs, but not back.” The peak period of difficulty for participant 5 occurs in week 2. As she continues practicing the body scan, she displays somatic and emotional difficulty when she writes “I had emotions of anger in pelvic area, happiness in stomach, and sadness to the point of crying in my hands.” Once sitting meditation and yoga are introduced, participant 5 writes fewer entries and displays less difficulty. In week 3, she records observations such as “back was sore during the seated position” but how the session was

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“very relaxing.” Participant 5’s final entry during the course states “I walked home mindfully when I could not practice and it helped me. I felt as though I had practiced.”

Participant 6 (Dropout)

Participant 6 begins the course by noticing her breath for the first time and writing “feeling belly go up and down” and “trying to breathe from belly.” Towards the end of week 1, participant 6 has difficulty controlling her wandering thoughts, becomes more anxious, and notices “pain in lower back.” She displays a great deal of somatic and emotional difficulty in week 2 of the course. By week 2, she really becomes aware of the pain in her lower back and feels very anxious and worried. Even though she does experience a few moments of peace and sees “tree images,” she writes how the anxiety is building up. Before she drops the course in week 3, participant 6 displays negative reactivity by feeling “blubbery, self-conscious, and out of shape.” Her back still hurts and she also feels like she’s wasting her time.

Table 4. Dynamic interchange of repeription and reactivity in MBSR

Table Legend: Participants 1, 3, 4, and 5 displayed an increase in meta-awareness at the end of the course and participant 2 displayed less negative reactivity at the end of the course. In participants 1 and 2, initial repeription was followed by a period of negative reactivity in week 5, followed by immediate improvement in repeription in week 7.

Participant	Weeks 1-2	Weeks 3-4	Weeks 5-6	Week 7
Subject 1	<i>Repeription</i> - “Abdominal discomfort, tension on left side of torso” (week 1)	<i>Reactivity</i> - “Frustration with the body response (not relaxing the specific muscle groups— ab/digestion area)” (week 3)	<i>Reactivity</i> - “Feeling insecure, desire to move, quit and move to Bahamas or someplace with a different pace” (week 5)	<i>Repeription</i> - “Focused on connected to my bed as I lay, only thinking of this moment”
Subject 2	<i>Reactivity</i> - I felt kind of gross and fat while focusing on my abdomen and pelvis” (week 1)	<i>Reactivity</i> - “Distracted, wanted it to be over” (week 4)	<i>Reactivity</i> - “Desire for it to end. I hated this” (week 5) <i>Repeription</i> - “Noticed heartbeat and pain in lower back” (week 6)	<i>Repeription</i> - “Pain in many parts of body. Difficulty with thoughts”
Subject 3	<i>Repeription</i> - Fatigue—hard to stay awake” (week 1)	<i>Reactivity</i> - “Hard to not think about work—work topics keep coming to mind, about things I need to do later” (week 3)	<i>Repeription</i> - “More aware of all my thoughts, practiced watching them go by like clouds” (week 5)	n/a
Subject 4	<i>Reactivity</i> - “The pressure of floor on hip started to bother me” (week 1) <i>Repeription</i> - “Toes were cold and hands were a little cold but rest of the body was warm” (week 2)	<i>Repeription</i> - “While doing standing meditation— felt gravity moving my body as if my body was floating” (week 4)	<i>Repeription</i> - “Had 3 or 4 experiences in which for a few seconds I felt my upper body was slightly rocking to the sound of my heartbeat” (week 5) <i>Repeription</i> - Relaxed hands, arms, legs, feet felt very heavy by the	<i>Repeription</i> - “Focused on my breathing and on the feeling of the wind on my body and was aware of the sounds of the waves”

			end" (week 6)	
Subject 5	<p><i>Reperception</i>- "Could feel waves of tingling/pressure on toes, feet, legs, but not back" (week 1)</p> <p><i>Reactivity/Reperception</i>- "Was alert for all of scan—had emotions of anger in pelvic area, happiness in stomach, and sadness to the point of crying in my hands" (week 2)</p>	<p><i>Reperception</i>- "Back was sore during the seated position" (week 3)</p>	<p><i>Reperception</i>- "But today I walked home mindfully when I could not practice and it helped me. I felt as though I had practiced" (week 6)</p>	n/a
Subject 6	<p><i>Reperception</i>- "Feeling belly go up and down" (week 1)</p> <p><i>Reperception</i>- "Became cold and disoriented when I fell asleep" (week 2)</p>	<p><i>Reactivity</i>- "Felt blubbery, felt self-conscious out of shape." (week 3)</p> <p><i>Reactivity</i>- Not wishing I could think "I'm wasting my time" (week 3)</p>	<i>Dropout</i>	<i>Dropout</i>