Measuring Patient Progress during Mindfulness-Integrated CBT

Mindfulness-based Self-Efficacy Scale and Equanimity Scale

Bruno A. Cayoun

NovoPsych MiCBT INSTITUTE

1

Webinar Summary

- Introduction to mindfulness practice
- Rationale for using mindfulness in therapy
- The Co-emergence Model of Reinforcement
- Overview of the MiCBT 4-stage program
- Expected brain changes with MiCBT
- Difficulties measuring mindfulness
- The Mindfulness-based Self-Efficacy Scale
- The Equanimity Scale 16

NovoPsych MiCBT INSTITUTE

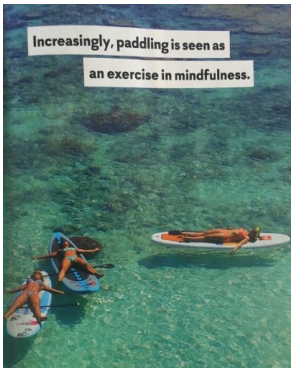
2

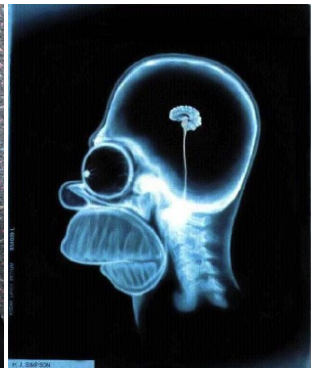
© MiCBT Institute & NovoPsych

What is Mindfulness?

Mindfulness > Attention

Mindlessness ≠ Inattention





NovoPsych MiCBT INSTITUTE

3

Historical Background

- Mindfulness training is an ancient Eastern science, used for at least 26 centuries
- Used for the purpose of integrating natural laws into decisions and actions in everyday life
- Radical long-term changes in personality traits have been reported in ancient Eastern literature

NovoPsych MiCBT INSTITUTE

4

Mindfulness

- An intentional experiential awareness of the present moment, free from reactivity and identification with experience.

NovoPsych MiCBT INSTITUTE

5

Mindfulness

- A means to an end, not the final purpose
- A tool of investigation of a more objective reality
  1. Sustained attention
  2. Non-identification
  3. Equanimity (experiential acceptance + non-reactivity)

NovoPsych MiCBT INSTITUTE

6

Upekkha in Pali

Webster's Dictionary 1913

E/qua-nim′i-ty (ē/kwȧ-nĭm′ĭ-tў), *n.* [L. *aequanimitas*, fr. *aequanimus*: cf. F. *équanimité*. See EQUANIMOUS.] Evenness of mind; that calm temper or firmness of mind which is not easily elated or depressed; patience; calmness; composure; as, to bear misfortunes with *equanimity*.

E-quan′i-mous (ē-kwăn′ĭ-mŭs), *a.* [L. *aequanimus*, fr. *aequus* equal + *animus* mind.] Of an even, composed frame of mind; of a steady temper; not easily elated or depressed. *Bp. Gauden.*

NovoPsych MiCBT INSTITUTE

7

Mechanisms of Action and Definition

Awareness and equanimity as core mechanisms

- Equanimity in the mindfulness context:
  - "The ability to see without being caught by what we see" (Gil Fronsdal, 2004)
  - "The ability to remain unperturbed by an event experienced within the framework of one's body and thoughts as a result of objective observation. Therefore equanimity relies on awareness of one's thoughts and somatic sensations" (Cayoun, 2003)

NovoPsych MiCBT INSTITUTE

8

Do we need to meditate?

- Using more complex software with old hardware?
- Repeated practice produces neuroplasticity
- Practice is necessary for effective behaviour change
  - There can be experiential acceptance only when there is experiential exposure
  - Relies on interoceptive desensitisation, not on top-down/cognitive processing

NovoPsych MiCBT INSTITUTE

9

Practice & Operationalisation

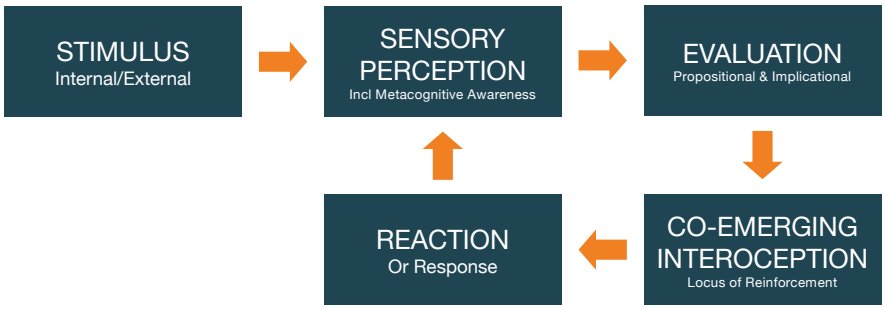
1. Concentration on breathing (attention regulation)
   - 3 executive functions and their benefits
2. Systematic body scanning to develop equanimity (emotion regulation)
   - Generalised interoceptive exposure and desensitisation
   - Requires inhibitory control to prevent learned responses and foster acceptance

- General Aims
  - Develop greater self-awareness, objectivity, acceptance and detachment with each experience

NovoPsych MiCBT INSTITUTE

10

The Co-Emergence Model of Reinforcement



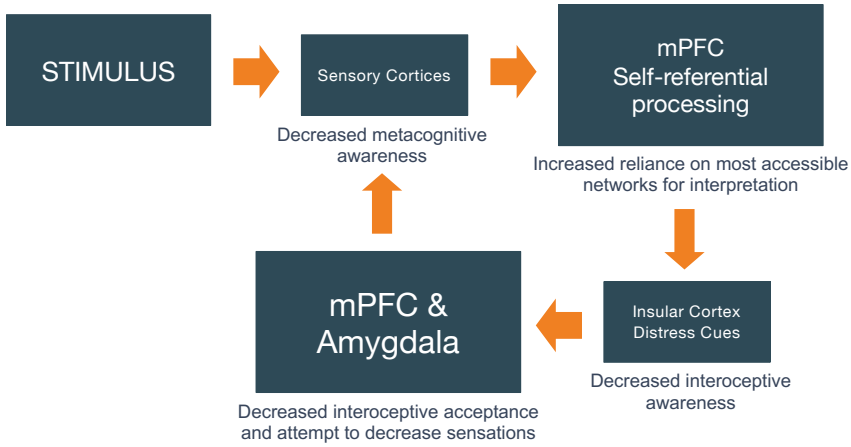
(Cayoun, 2011; Cayoun & Shires, 2020)

- Craving and aversion towards body sensations act as reinforcers
- The 4 components function in equilibrium when mental health is optimum, and disequilibrium when normal functioning is challenged

NovoPsych MiCBT INSTITUTE

11

System in Disequilibrium



The insular cortex acts as a go-between to convey messages from the mPFC to the limbic areas, especially amygdala (Mansour et al., 2016)

NovoPsych MiCBT INSTITUTE

12

Disequilibrium and Psychopathology

- Learned disequilibrium is associated with mental health disorders
  - The more stable and established the disequilibrium, the more chronic the condition/personality traits
  - Interoceptive dysfunction in psychopathologies (Khalsa et al, 2018)
    - Depression (Avery et al, 2013; Feldman-Barrett et al, 2017; Harshaw, 2015)
    - Both current and remitted MDD patients showed significant volume reduction of the left anterior insular cortex as compared with healthy controls (Takahashi et al, 2010)
    - Ruminative brooding in anxiety and depression (Lackner & Fresco, 2016)
    - Suicidality (Forrest et al, 2015)
    - Drug addiction (Garavan, 2010)
    - Poor error detection (Ullsperger et al, 2010)
    - Impaired emotional processing (Ibanez et al, 2010; Pollatos & Shandry, 2007)
    - Impaired emotional memory (Pais Vieria et al, 2016; Pollatos & Shandry, 2007)
    - Borderline PD (Krause-utz et al, 2014; Kluetsch et al, 2012)
    - Trauma (O'Donnell et al, 2016)

NovoPsych MiCBT INSTITUTE

13

A Rationale for Mindfulness-integrated CBT

- System in equilibrium 'resists' psychopathology
- More healthy and relaxed individuals tend to feel subtler body sensations more readily and have a greater ability for metacognitive awareness
- Strong evidence that daily training in mindfulness leads to neuroplasticity, which facilitates the transfer of skills in daily life and promotes well-being

NovoPsych MiCBT INSTITUTE

14

Creating Equilibrium

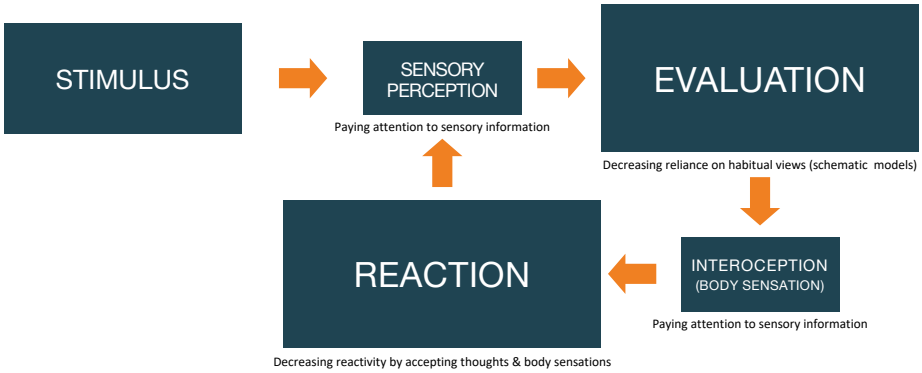
- Stage 1 of MiCBT: Mindfulness meditation
  - Mindfulness of breath helps reduce self-referential evaluation
  - Systematically body-scanning helps develop interoceptive awareness and acceptance (i.e., equanimity)
- Socratic Dialogue to challenge resistance and self-defeating thoughts, and encourage practice

NovoPsych MiCBT INSTITUTE

15

Creating Equilibrium

- Attention is reallocated from Evaluation and Reaction to Sensory Perception and Interoception to promote balance and stability

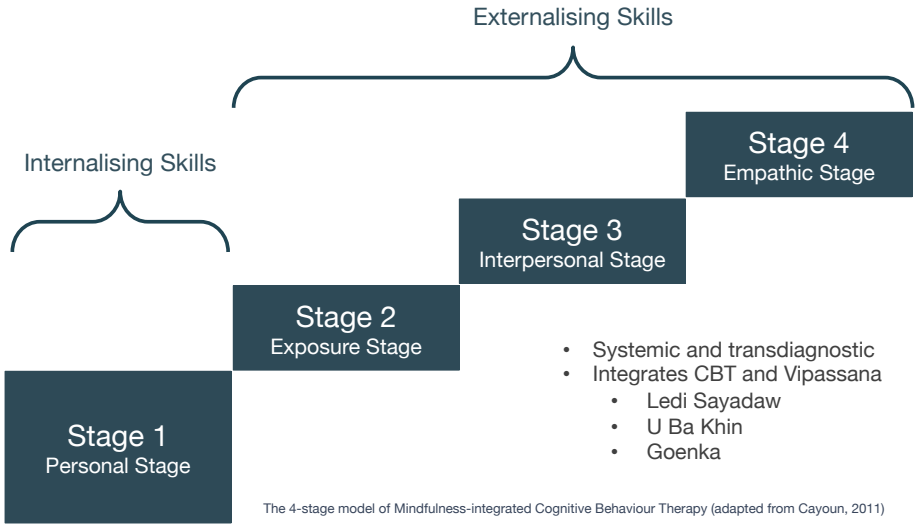


- The main aim is explained to clients in terms of recalibration of CNS (a non-pathologising approach)

NovoPsych MiCBT INSTITUTE

16

The Mindfulness-integrated CBT Programme



- Systemic and transdiagnostic
- Integrates CBT and Vipassana
  - Ledi Sayadaw
  - U Ba Khin
  - Goenka

The 4-stage model of Mindfulness-integrated Cognitive Behaviour Therapy (adapted from Cayoun, 2011)

NovoPsych MiCBT INSTITUTE

17

MiCBT > TAU

Brain plasticity in Perinatal Depression
EEG: > frontal (left PFC) asymmetry in MS
OCD: MiCBT & ACT > CBT & MCT
Heterogenous groups (comorbidity)
Chronic Pain
Breast cancer related pain
Induced Pain
Emotional Distress
Unipolar Depression
Athlete Performance Anxiety
Anxiety (GAD)
Perfectionism
Type 2 Diabetes
Professional Satisfaction
Avoidance and Procrastination
Drug & Alcohol Addiction
Caring Ability

See https://www.mindfulness.net.au/research/research-studies/

Full references available at end of presentation

NovoPsych MiCBT INSTITUTE

18

Difficulties Measuring Mindfulness

1. Problems with construct validity
   - Items are often more related to in/attentiveness
   - Being inattentive at a given moment does not reflect poor trait mindfulness
   - Lack of equanimity items despite its central mechanism

NovoPsych MiCBT INSTITUTE

19

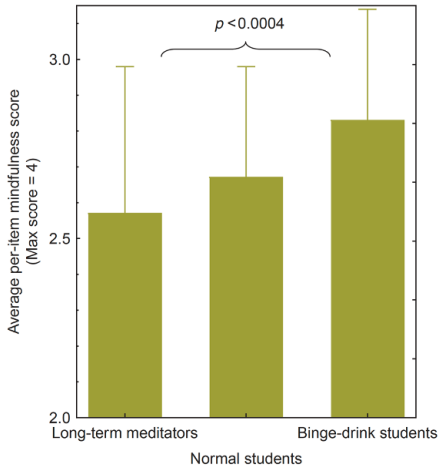
Difficulties Measuring Mindfulness

2. Comparing meditators and non-meditators
   - How can we know how mindful we are without sufficient mindfulness training to assess it?

NovoPsych MiCBT INSTITUTE

20

Difficulties Measuring Mindfulness



Grossman & Van Dam, 2011

Mindfulness scores (Freiburg Mindfulness Inventory) of long-term experienced insight meditators, healthy nonmeditating students, and binge-drinking, non-meditating students. Difference between meditators and binger drinkers (p = 0.0004); differences between meditators and normal students approached significance (*p* = 0.06)

NovoPsych MiCBT INSTITUTE

21

Difficulties Measuring Mindfulness

3. Comparing between meditators
   - Varying lineage of mindfulness training produce different skills measured by the same items

NovoPsych MiCBT INSTITUTE

22

The Mindfulness-based Self-Efficacy Scale-Revised (MSES-R)

- Developed to overcome some of these limitations

1. Measures self-efficacy in overcoming daily stressors as the *consequences of mindfulness* during and after MiCBT and other mindfulness programs

2. Developed to measure the confidence in achieving the original purpose of mindfulness (reducing suffering), rather than measuring the construct of mindfulness itself.

NovoPsych MiCBT INSTITUTE

23

The Mindfulness-based Self-Efficacy Scale-Revised

- Characteristics
  - 22-item self-report scale for adults and adolescents
  - Contains 6 subscales:
    1. Emotion Regulation
    2. Social Skills
    3. Equanimity
    4. Distress Tolerance
    5. Taking Responsibility
    6. Interpersonal Effectiveness
  - Norms comparison ($N > 7000$)

NovoPsych MiCBT INSTITUTE

24

The Mindfulness-based Self-Efficacy Scale-Revised

Pen and paper or online

Mindfulness-Based Self Efficacy Scale - Revised© (MSES-R)

Bruno A. Cayoun, MiCBT Institute & University of Tasmania

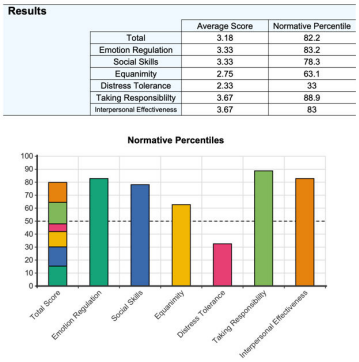
NAME..... DATE..... Session/Week No.....

Circle one number in the shaded column according to how much you now agree with each statement below, using the following scale:

Not at all	A little	Moderately	A lot	Completely
0	1	2	3	4

Try not to spend too much time on any one item. There are no right or wrong answers.

1.	I get easily overwhelmed by my emotions	0 1 2 3 4
2.	I find it difficult to make new friends	0 1 2 3 4
3.	I try to avoid uncomfortable situations even when they are really important	0 1 2 3 4
4.	When I feel very emotional, it takes a long time for it to pass	0 1 2 3 4
5.	I feel comfortable saying sorry when I feel I am in the wrong	0 1 2 3 4
6.	It is often too late when I realise I overreacted in a stressful situation	0 1 2 3 4
7.	I get so caught up in my thoughts that I end up feeling very sad or anxious	0 1 2 3 4
8.	When I have unpleasant feelings in my body, I prefer to push them away	0 1 2 3 4
9.	I can resolve problems easily with my partner (or best friend if single)	0 1 2 3 4
10.	I can face my thoughts, even if they are unpleasant	0 1 2 3 4
11.	My actions are often controlled by other people or circumstances	0 1 2 3 4
12.	I get caught up in unpleasant memories or anxious thoughts about the future	0 1 2 3 4
13.	I can deal with physical discomfort	0 1 2 3 4
14.	I feel I cannot love anyone	0 1 2 3 4
15.	I am often in conflict with one (or more) family member	0 1 2 3 4
16.	I avoid feeling my body when there is pain or other discomfort	0 1 2 3 4
17.	I do things that make me feel good straightaway even if I will feel bad later	0 1 2 3 4
18.	When I have a problem, I tend to believe it will ruin my whole life	0 1 2 3 4
19.	When I feel physical discomfort, I relax because I know it will pass	0 1 2 3 4
20.	I can feel comfortable around people	0 1 2 3 4
21.	Seeing or hearing someone with strong emotions is unbearable to me	0 1 2 3 4
22.	If I get angry or anxious, it is generally because of others	0 1 2 3 4



Results

	Average Score	Normative Percentile
Total	3.18	82.2
Emotion Regulation	3.33	83.2
Social Skills	3.33	78.3
Equanimity	2.75	63.1
Distress Tolerance	2.33	33
Taking Responsibility	3.67	88.9
Interpersonal Effectiveness	3.67	83

NovoPsych MiCBT INSTITUTE

25

The Mindfulness-based Self-Efficacy Scale-Revised

- Good psychometric properties since 2012
- Recent CFA
  - 2 Australian samples (clinical N = 1378; community N = 2866)
  - 2 Canadian samples (clinical N = 595; community N = 321)
  - 1 Australian university student sample (N = 521)
  - Overall reliability (alpha) = 0.89
  - Test-retest reliability over two weeks = 0.88
  - Good validity (high positive correlations with other mindfulness and related constructs, and negative correlations with DASS

NovoPsych MiCBT INSTITUTE

26

The Mindfulness-based Self-Efficacy Scale-Revised

Mindfulness
https://doi.org/10.1007/s12671-022-01834-6

ORIGINAL PAPER

Validation and Factor Structure of the Mindfulness-Based Self Efficacy Scale-Revised

Bruno Cayoun[1,2] · Bradley Elphinstone[3] · Natasha Kasselis[2] · Glenn Bilsborrow[1,2] · Clive Skilbeck[2]

Accepted: 23 January 2022

NovoPsych MiCBT INSTITUTE

27

The Equanimity Scale 16 (ES-16)

- Developed to specifically measure core mechanism of change with mindfulness
  1. Measures trait equanimity and its effects in overcoming daily stressors
  2. Developed to measure experiential acceptance and reduction or reactivity in daily life

NovoPsych MiCBT INSTITUTE

28

The Equanimity Scale 16

- Development and Characteristics
  - We identified a pool of 517 theoretically appropriate items from 26 existing self-report measures of mindfulness and relevant constructs.
  - 42 items were endorsed as being sufficiently representing equanimity.
  - 16-item self-report scale for adults
  - Contains 2 subscales:
    1. Experiential Acceptance
    2. Non-reactivity
  - Norms comparison (*N* = 223)

NovoPsych MiCBT INSTITUTE

29

The Equanimity Scale 16

Pen and paper or online

Equanimity Scale 16

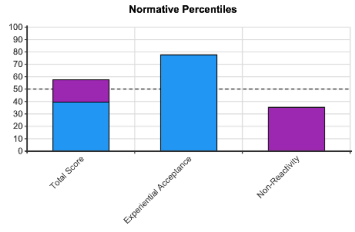
Select the response that best describes how you view yourself, based on the scale below. Select the appropriate responses based on how much you agree with each statement right at this moment. Try not to spend too much time of any one item. There are no right or wrong answers.

- Strongly disagree = 1
- Mildly disagree = 2
- Agree and disagree equally = 3
- Mildly agree = 4
- Strongly agree = 5

1. When I have distressing thoughts or images, I am able just to notice them without reacting.	1 2 3 4 5
2. I approach each experience by trying to accept it, no matter whether it is pleasant or unpleasant.	1 2 3 4 5
3. When I experience distressing thoughts and images, I am able to accept the experience.	1 2 3 4 5
4. I can pay attention to what is happening in my body without disliking or wanting more of the feeling or sensation.	1 2 3 4 5
5. When I notice my feelings, I have to act on them immediately.	1 2 3 4 5
6. If I notice an unpleasant body sensation, I tend to worry about it.	1 2 3 4 5
7. When I feel physical discomfort, I can't relax because I am never sure it will pass.	1 2 3 4 5
8. I perceive my feelings and emotions without having to react to them.	1 2 3 4 5
9. I remain present with sensations and feelings even when they are unpleasant.	1 2 3 4 5
10. I notice that I need to react to whatever pops into my head.	1 2 3 4 5
11. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.	1 2 3 4 5
12. I can't keep my mind calm and clear, especially when I feel upset or physically uncomfortable.	1 2 3 4 5
13. I endeavor to cultivate calm and peace within me, even when everything appears to be constantly changing.	1 2 3 4 5
14. I am impatient and can't stop my reactivity when faced with other people's emotions and actions.	1 2 3 4 5
15. I am not able to tolerate discomfort.	1 2 3 4 5
16. I am not able to prevent my reaction when someone is unpleasant.	1 2 3 4 5

Results

	Score	Normative Percentile
Total Score (16-80)	61	58.6
Experiential Acceptance (8-40)	34	78
Non-Reactivity (8-40)	27	35.9



NovoPsych MiCBT INSTITUTE

30

The Equanimity Scale 16

- Good psychometric properties in 3 Australian studies
  - Included EFA, CFA, and post-then-pre studies
  - Overall reliability (alpha) = 0.88
  - Test-retest reliability over two-six weeks = 0.87
  - Good validity (high positive correlations with other mindfulness and related constructs, and negative correlations with DASS
  - Good sensitivity to change during therapy

NovoPsych MiCBT INSTITUTE

31

The Equanimity Scale 16

Mindfulness
https://doi.org/10.1007/s12671-020-01503-6

ORIGINAL PAPER

Development and Validation of the Equanimity Scale-16

Holly T. Rogers[1] · Alice G. Shires[1,2] · Bruno A. Cayoun[2]

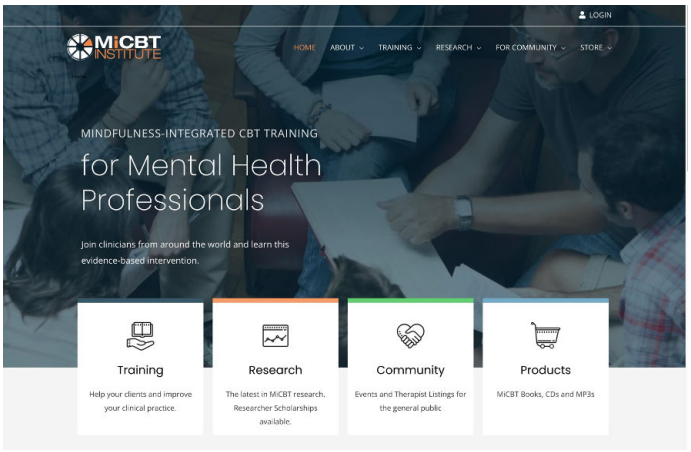
Accepted: 9 September 2020

NovoPsych MiCBT INSTITUTE

32

MiCBT Training

https://www.mindfulness.net.au



NovoPsych MiCBT INSTITUTE

33