**Comparing brief mindfulness manipulation (BMM) to attention feedback awareness and control computer-based training (A-FACT)**

Potential participants will be recruited at the University of Haifa, other universities and general population in Israel. Participants will be screened through a web-based assessment (Qualtrics), in which they will provide informed content and fill-out demographic information, a brief rumination questionnaire (RRS, brooding scale) and a question about suicidal ideation (from the PHQ-9?). Those high on the rumination score (>CUTOFF) and with no indication to suicidal ideation, will subsequently be contacted for further participation in the experiment. Additional exclusion criteria are: < 18 years of age; uncorrected vision problems; hearing problems; self-reported mother tongue other than Hebrew.

Eligible participants will complete a web-based Simulated Thought Paradigm (STP) stimuli selection at home, using their computer or smartphone. During this web-based procedure they will: (1) rate the frequency and negative emotional reactivity for a list of sentences that reflect neutral and negative thoughts; and (2) record the highest negatively rated sentences and emotionally neutral sentences in their own voice. These will be used as idiographic stimuli in the experimental sessions.

Participant will be randomly assigned to one of three training groups: *Attention Feedback Awareness and Control Training* (A-FACT); *Brief Mindfulness Manipulation* (BMM); or the *Control “placebo”* group. Before and after each group’s training task the *Digit Categorization Task* (DCT) will be administered. After the post-training DCT, the following tasks will be administered to all groups: the *Meta Awareness for Bias* (MAB) task and the *One-Back Dichotic Listening* *task*.

In the *Digit Categorization Task* (DCT) participants will be asked to categorize whether a digit between 1 and 8 presented on a monitor is odd or even, while listening to simulated neutral or negative thoughts (\_\_\_\_\_\_*Reference*?\_\_\_\_\_\_\_\_). DCT measures one’s ability to exercise attentional control and disengage from negative content by measuring reaction time (RT) to the categorization demand. The task consists of 20 STP trials (10 different STPs repeated twice throughout the task), out of which 5 are negative STPs and 5 are neutral STPs;

*The attention feedback awareness and control computer-based training (A-FACT)* is a training that aims to increase awareness to attentional bias toward negative thoughts, and thereby to train attentional control. It contains the Squares Categorization-STP task, in which participants will be asked to categorize whether the number of squares presented on a monitor is more or less than five, while listening to simulated neutral or negative thoughts. The training based on feedback on attentional bias following negative thought (\_\_\_\_\_\_*Reference*?\_\_\_\_\_\_\_\_). The task consists of 80 STP trials (40 different STPs repeated twice throughout the task), out of which 40 are negative STPs and 40 are neutral STPs;

*The brief mindfulness manipulation (BMM)*aims to train mindfulness skills of present moment awareness, and specifically the ability to disengage attention to thoughts by focusing on a body object (i.e. the breath). The task is comprised of focused attention mindfulness mediations toward the breath, in which participant are trained to press a button after each instance of awareness for an inhalation or an exhalation, and to not press while noticing that their awareness was drown to the STPs content. In this instances participant are instructed to disengage from the STP content, and to re-focus on the breath. The BMM task has the same amount and composition of trials as in A-FACT.

*The control “placebo” group* contains the Squares Categorization-STP task (parallel to A-FACT) , without the “active ingredient” of feedback about attentional bias. The control task has the same amount and composition of trials as in A-FACT.

The *Meta Awareness for Bias* (MAB) is a task that………aims at….

In the *One-Back Dichotic Listening* *task…* it is aimed at….

The main session will be held on “Zoom” virtual meeting or at the Universe of Haifa. If the participant will choose to participate in a remote running via “Zoom”, the experimenter will install python-based program that run the experiment on the participant’s computer by using remote control. During the installation, the participant will complete self-report measures of depression, worries, and related constructs (e.g., mindfulness) through a web-based assessment (Qualtrics) using smartphone. The main session will include 4 tasks integrating the Simulated Thoughts Paradigm (see description above) as task stimuli: (1) The Simulated Thought Paradigm integrated into the Digit Categorization Task will be used to measure change, from pre-intervention to post-intervention, in internal attentional disengagement from simulated negative and neutral self-referential thoughts to a digit categorization (odd or even) task. Attentional disengagement will be computed via difference in reaction time to respond to digit target between negative and neutral self-referential thoughts. A positive score reflects greater difficulty to disengage from negative vs. neutral stimuli; (2) The Simulated Thought Paradigm integrated into the Body Map Task will be used to measure change, from pre- training to post- training, in interoceptive attention via subjective assessment (i.e. sensibility) of the frequency, location, intensity and hedonic tone of bodily sensations, as well as change in emotional experience (5-point Likert scale ranging from 1 to 5), in response to negative and neutral self-referential thoughts.; (3) The Simulated Thought Paradigm integrated into the Dichotic 1-Back Task,  will be used at post training to measure internal selection between concurrent simulated negative and neutral self-referential thoughts. Biased selective internal attention will be computed via subtracting behavioral responding (e.g., accuracy) between concurrent negative and neutral self-referential thoughts. A positive bias score reflects greater selective attention to negative vs. neutral stimuli; (4) Meta awareness bias task (MAB), will be used at post training to measure the capacity for meta-awareness of biased internal attention, in which participants engage once again in the DCT with STPs stimuli while reporting on occurrences of awareness for attentional biases using the self-caught paradigm; After finishing the tasks participants will receive a monetary reward for their participation in the study.