Time-Effectivity of WeMind vs. Lightbar in EMDR therapy in a clinical population

Conducted with: CaleidoZorg & CZ

TARGET

Comparing time effectiveness between WeMind and lightbar use during EMDR sessions.

METHOD

Twelve EMDR therapists conducted 52 sessions (26 WeMind, 26 Lightbar) during their EMDR trajectories. The client population consisted of 23 clients between the ages of 21 - 63 all with psychiatric diagnoses, primarily PTSD and stressor-related disorders. Therapists kept track of direct treatment time, administration time, desensitization time and SUD records over a three-month period about their treatments.

RESULTS

The data shows that the direct time gain was mainly achieved during the desensitization phase, which for the same result (ΔSud: WeMind = 5.37, lightbar = 5.38) took 21 minutes (49%) shorter with WeMind than with the lightbar. This can be explained by a higher working memory load (see appendices 1 and 2). Also, the number of targets treated per session was higher with WeMind. The data also showed that WeMind sessions lasted on average 14 minutes (23%) shorter compared to sessions with lightbar. Also, 3.3 minutes (33%) of administration time were saved, presumably because therapists could already work on their session report in the application.
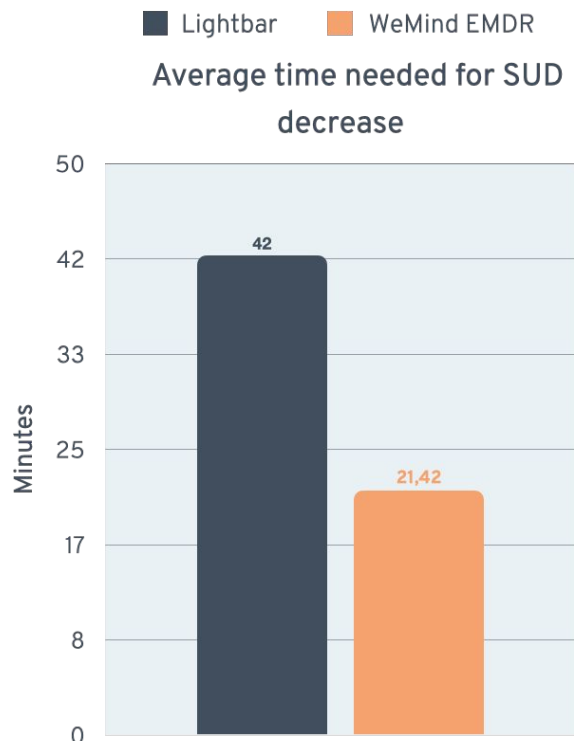
Legend: ■ Lightbar ■ WeMind EMDR

Average time needed for SUD decrease

Figure 1: Total desensitization time between starting SUD and end SUD for WeMind and Lightbar conditions

Legend: ■ Lightbar ■ WeMind EMDR

Direct session duration

Legend: ■ Lightbar ■ WeMind EMDR
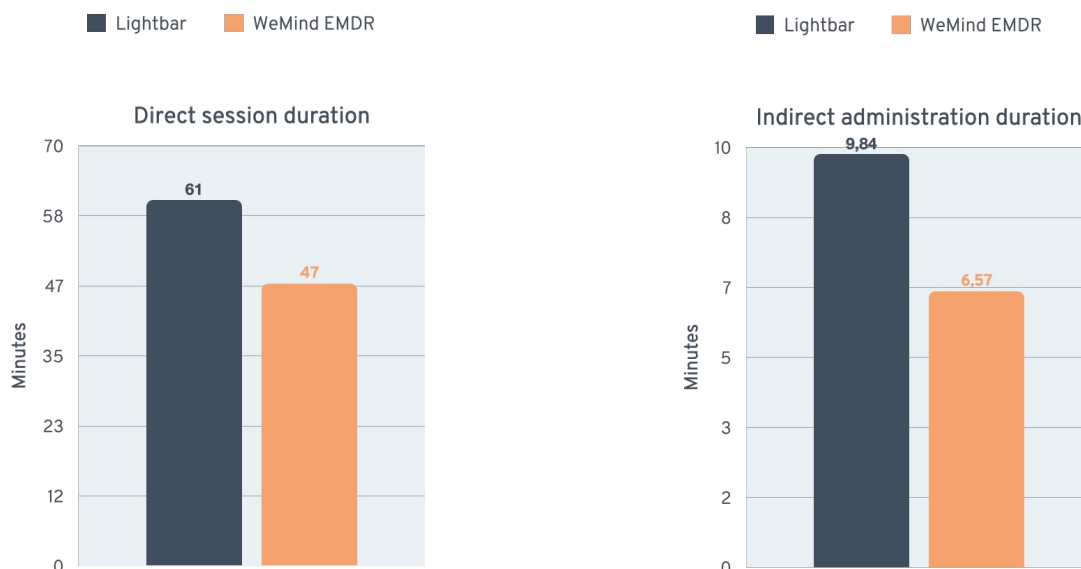
Indirect administration duration

Figure 2: Total session and administration time for WeMind and Lightbar conditions

Appendice 1: Virtual Reality utilization for the examination and enhancement of working memory load for visual and auditory dual tasking

Conducted with: Maastricht University

RESEARCH BACKGROUND

The mechanism of action of EMDR is explained by working memory theory. Innovative technology can be used to measure working memory load of different tasks and thereby increase the effectiveness of EMDR.

TARGET

To potentially improve the effectiveness of EMDR and EMDR 2.0, the purpose of the current study was to investigate opportunities to load working memory by manipulating the speed of eye movements and the predictability of eye movement direction and adding an additional task to the eye movements.

METHOD

39 psychology students each went through multiple conditions (It is an within-design and are therefore their own control group). Subjects performed an Auditory RIR (reaction time) task in Virtual Reality as well as visual tasks that looked at differences in eye movement pattern (horizontal vs. random) and speed (no 0 hrtz, slow 0.8 hrtz; average 1.0 hrtz and fast 1.2 hrtz) of eye movements. Also, a third visual task was added that consisted of responding to the ball when it changed shape in a cylinder. For each task, reaction times were measured with the primary auditory RIR task.

RESULTS

1: The combination of the working memory tasks led to maximum working memory load for the auditory modality of working memory. There was a so-called ceiling effect.

2: Combining the working memory tasks was taxing enough that making/adding eye movements, regardless of the speed of these movements, no longer led to additional working memory load for the auditory modality of working memory. For the visual modality of working memory, faster eye movements did lead to more working memory load.

3: Adding additional tasks seems better than intensifying a task (eye movements).

Appendice 1: Virtual Reality utilization for the examination and enhancement of working memory load for visual and auditory dual tasking

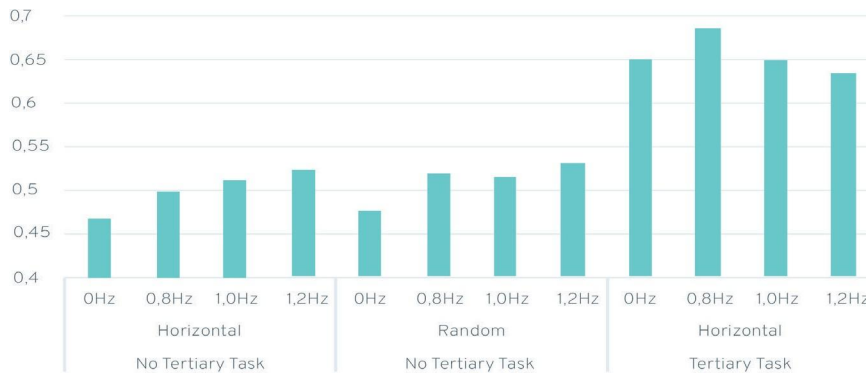Conducted with: Maastricht University

Figure 1: Average reaction times for the auditory RIR task for the horizontal and random eye movement directions for all speeds.
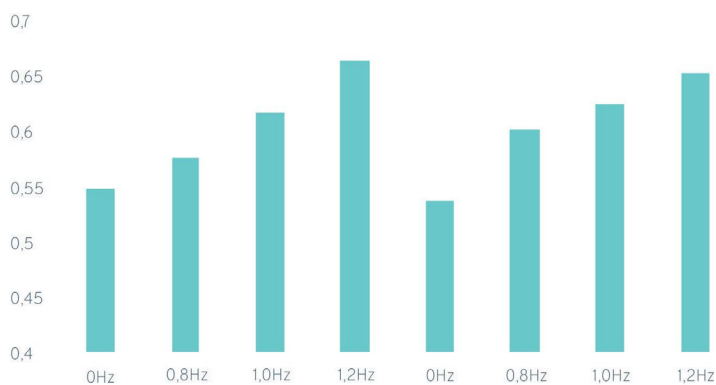

Figure 2: Average reaction times for the visual RIR task for the horizontal and random eye movement directions for all speeds.

Appendice 2: Working memory load during WeMind (smartphone)

Conducted with: University of Twente

TARGET

Previous research showed that increasing working memory load is beneficial in the desensitization effect in EMDR; thereby, some tasks are more superior in load than others, and complexity can be increased within a task. The current study examined the effects of combining multiple tasks (Visual RIR task + Auditory RIR task).

METHOD

52 psychology students each went through multiple conditions (It is an within-design and are therefore their own control group). Subjects performed an auditory and visual RIR task with eye movements in the WeMind smartphone application looking at differences in combination order (simultaneous vs. serial) and speed of eye movements no 0, slow (0.8 hrtz; mean 1.0 hrtz and fast 1.2 hrtz), For each task, reaction times were measured with the auditory and visual RIR task.

RESULTS

Combining RIR tasks led to a significantly increased working memory load for both visual and auditory modalities, and when combining the RIR tasks, eye movements led to further increased working memory load only in the visual modality. In addition, offering the tasks in serial order led to higher reaction time averages than offering the tasks simultaneously. This may be because task/attention switching is more taxing than attention distribution.
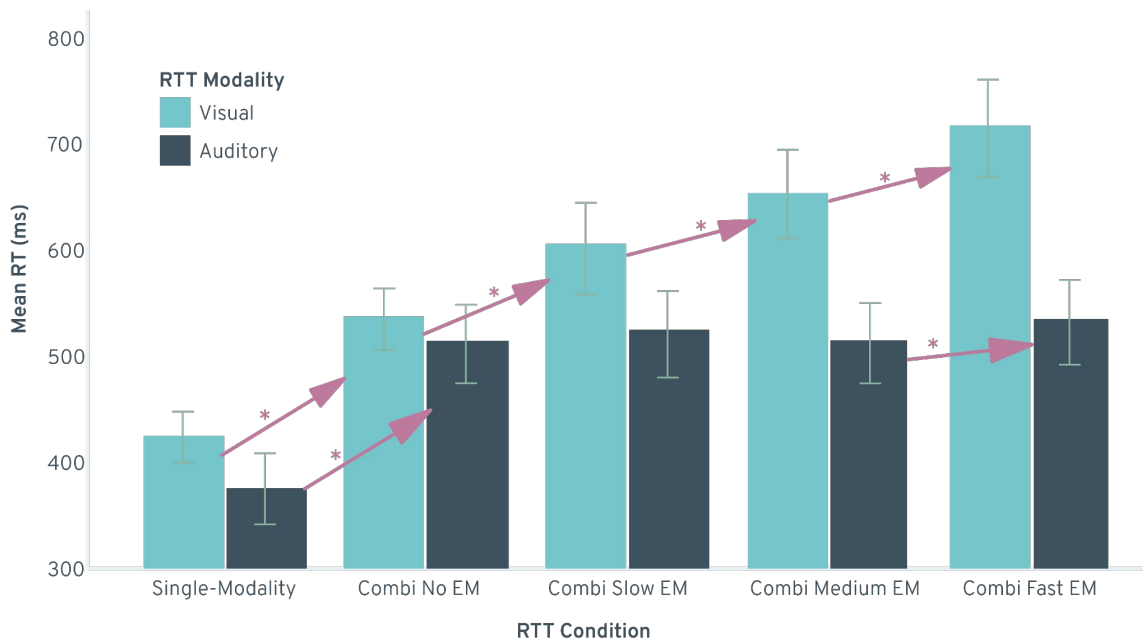

Figure 1: Mean reaction times (ms) for the different conditions and eye movement speeds. Arrows with * indicate significant improvement between successive conditions (p < .05).