

USABILITY AND EFFECTIVENESS OF A MOBILE APPLICATION, BBMIND, AS A TOOL FOR MINDFULNESS PRACTICE IN TREATING CHRONIC PAIN CONDITIONS

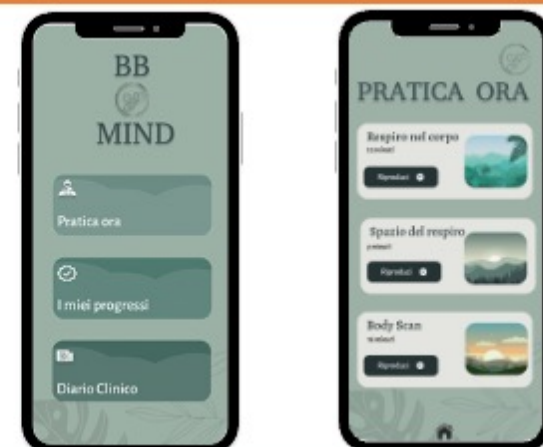
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INTRODUCTION. Chronic pain is a persistent and often treatment-resistant condition that significantly impairs quality of life. Patients with chronic pain, such as headache and neuropathic pain, can benefit from conventional therapies combined with behavioural ones, such as mindfulness.

AIM OF THE RESEARCH. This research project includes two studies aimed at validating BBMIND, a mobile application developed for online mindfulness sessions for patients with chronic pain syndromes.

The primary outcome is adherence to the practice, while the secondary outcome is to evaluate the development of mindfulness competence.



METHODS

STUDY 1 –HEALTHY POPULATION (HP)

PARTICIPANTS: N 41, N 25 dropped out (64.4%) > **N 16**
(14 F, age: M=25 ± 6)

BBMIND FEATURES:

- 1 mindfulness audio track (12 min)

MEASURES:

- System Usability Scale (SUS)
- User Experience Questionnaire (UEQ+)
- N. play mindfulness practice
- Five Facets Mindfulness Questionnaire (FFMQ)

PROCEDURE:

2 MONTHS OF MINDFULNESS PRACTICE

- Phase 1** (T0): FFMQ
- Phase 2** (1^o month): FFMQ, SUS, UEQ+
- Phase 3** (2^o month): FFMQ, SUS, UEQ+

STUDY 2 – CHRONIC PAIN PATIENTS (CPP)

PARTICIPANTS: N 41, N 14 dropped out (34%) + 6 excluded > **N 21**
(14 F, age: M=51 ± 11)

BBMIND FEATURES:

- 3 mindfulness audio tracks (3, 12, 15 min)
- Mindful tips

MEASURES:

- FFMQ, SUS
- General Self-Efficacy Scale (GSE)
- Medication Adherence Rating Scale (MARS) adapted
- Daily diary (Syntoms, N. play mindfulness practice)

PROCEDURE:

2 MONTHS OF MINDFULNESS PRACTICE

- Phase 1** (T0): FFMQ, GSE
- Phase 2** (1^o month): FFMQ, SUS, GSE, MARS
- Phase 3** (2^o month): FFMQ, SUS, GSE, MARS

RESULTS

SYSTEM USABILITY SCALE (SUS)

HP

- PHASE 2: M=83.50, SD=7.78
- PHASE 3: M=85.15, SD=7.64

CPP

- PHASE 2: M=87.40, SD=9.40
- PHASE 3: M=89.80, SD=8.91

(standard benchmark value: M≥ 68, range 0-100)

N. PLAY: MINDFULNESS PRACTICE

- HP:** M=20.81, SD=7.08 (2-3/week)
- CPP:** M=49.24, SD=43.26 (5-6/week)

One sample T TEST (p=.013)

(benchmark value: M = 20.81)

MARS – ADHERENCE TO MINDFULNESS PRACTICE CPP

- PHASE : M=19.65, DS=3.39 (range 0-25)
- PHASE : M=18.47, DS=4.30

ANOVA RM (p=.094)

DAILY DIARY CPP

M=16.80, SD=16.5

One sample T TEST (p<.001)

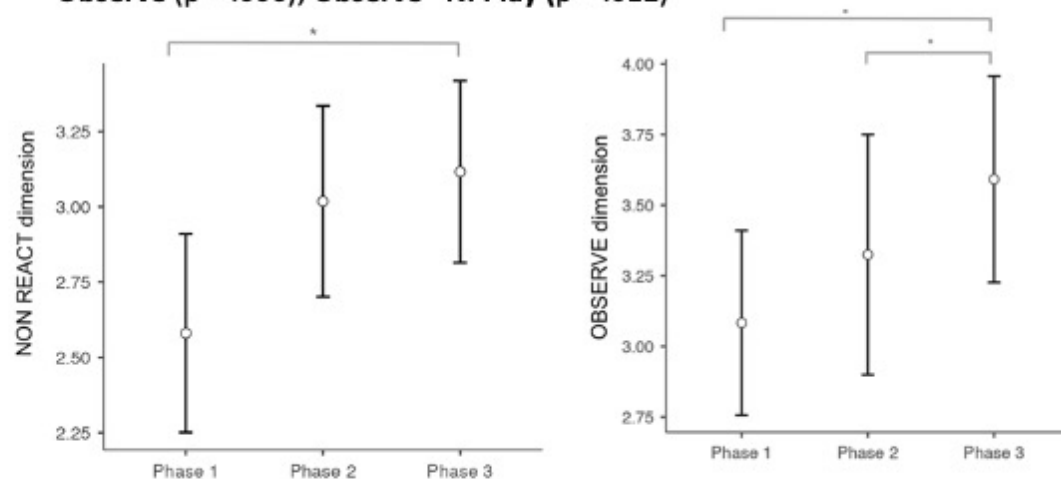
(benchmark value: M = 68 times)

DROP OUT

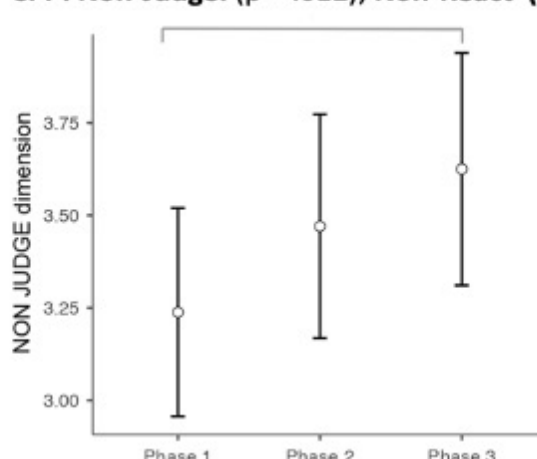
- HP:** drop out: 84% naïve; 16% experts
- CPP:** drop out: 43% naïve; 57% experts

FFMQ: MINDFULNESS SKILLS & PRACTICE

HP: Non-React and Non-react* N. Play (p<.001);
Observe (p = .006); **Observe* N. Play** (p = .012)



CPP: Non-Judge: (p = .012); **Non-React** (p<.001), **Mindfulness tot** (p=.046)



CONCLUSIONS

- BBMIND' s usability was positively evaluated.
- Participants maintained a high level of adherence: BBMIND is a tool to promote practising mindfulness at home, especially for experts.
- BBMIND can enhance mindfulness skills in healthy and clinical populations.

- Alexander, J. C. & Joshi, G. P. (2016). Smartphone applications for chronic pain management: a critical appraisal. *Journal of Pain Research*, 9, 731-734.

- Grazzi, L., Raggi, A., D'Amico, D., Sansone, E., Leonardi, M., Andrasik, F., ... & D'Andrea, G. (2019). A prospective pilot study of the effect on catecholamines of mindfulness training vs pharmacological prophylaxis in patients with chronic migraine and medication overuse headache. *Cephalalgia*, 39(5), 655-664.

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