Beliefs, emotions, and thoughts at the basis of Misophonia: An online clinical trial

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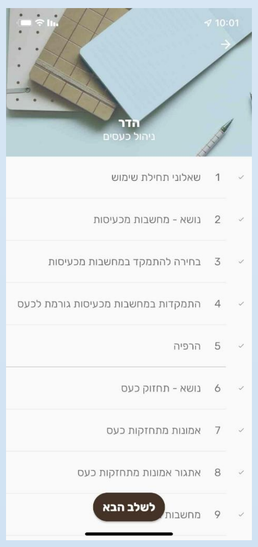
Introduction

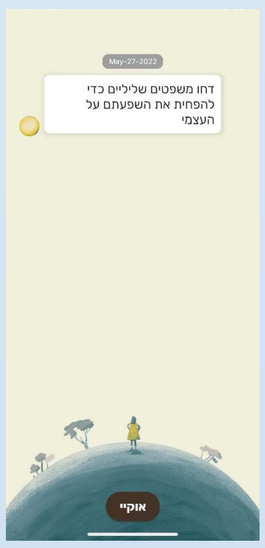
- Misophonia is a condition characterized by intense physiological and emotional responses such as anger and annoyance to specific sounds, resulting in significant distress and impairment in daily functioning (Jastreboff & Jastreboff, 2001; Schröder et al., 2013; Taylor, 2017).
- Anger related responses, therefore, are defining features of Misophonia.
- CBT-based interventions have been shown to alleviate Misophonia symptoms.
- We investigated the causal relationship between Misophonia and anger. Specifically, we conducted an RCT to investigate the effectiveness of a brief cognitive mHealth intervention in reducing Misophonia symptoms among individuals reporting high levels of pre-existing Misophonia symptoms.

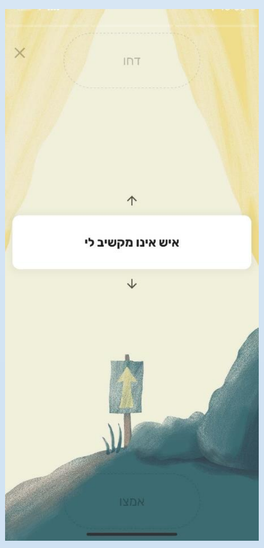
Method

- 85 participants with high levels of Misophonia symptoms used GGtude's mobile delivered anger module targeting anger cognitions.
- We conducted a randomized controlled trial with a crossover design to evaluate the efficacy of this intervention on anger and Misophonia related symptoms and cognitions.
- Participants were randomly assigned to an immediate app use (iApp) or delayed app use (dApp) group and completed measures at baseline (T0), after 15 days of app use (T1 for iApp, T2 for dApp), and at 1-month follow-up (T3).

The GGtude Platform







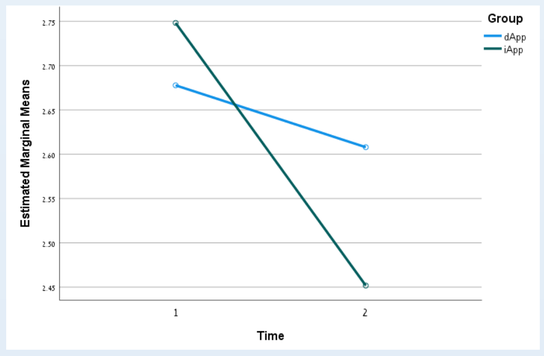
Hypothesis

- We hypothesized that reduction in maladaptive beliefs, mainly anger related beliefs, would be associated with decreased Misophonia symptoms and associated cognitions.

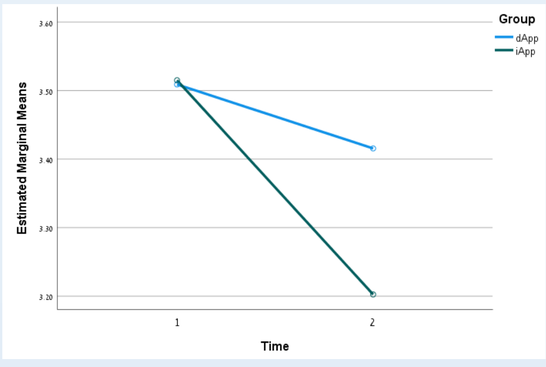
Results

- Compared to the dApp group, at T1 the iApp group exhibited lower Misophonia symptoms on some symptom measures (but not on others), as well a significant reduction in anger metacognition and rumination. These differences were maintained at follow-up. The within-group effects in both groups also revealed lower Misophonia symptoms and anger metacognition symptoms at T1 or T2 than at T0, and these differences were maintained at follow-up. These findings suggest that targeting anger-related beliefs and meta-cognitions can significantly reduce Misophonia-related distress.

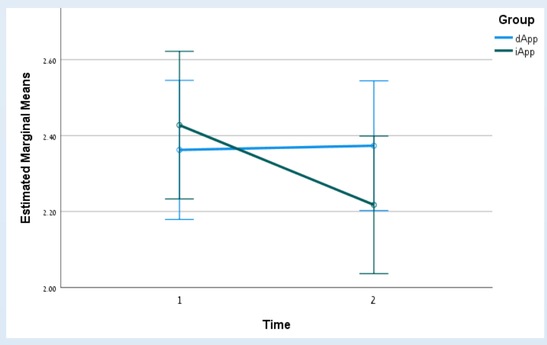
Misophonia Screening



Amisos-R



Metacognition & Anger Processing



Anger Rumination Scale

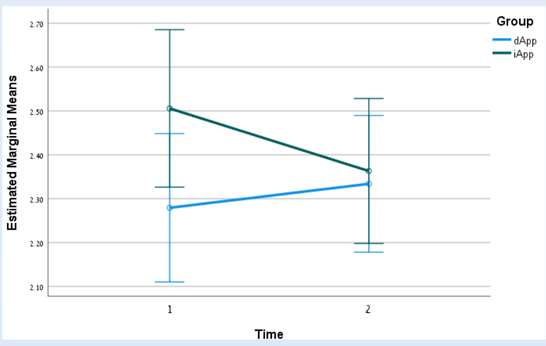


Table 1: Comparisons across 3 time points for iApp and 4 time points for dApp group.

		Post-hoc
Metacognition and Anger Processing-Rumination	iApp	**T0 vs T1= p = 0.015** **T0 vs T3= p = 0.02** T1 vs T3= p = 1.00
	dApp	T0 vs T1= p = 1.00 **T0 vs T2= p = 0.03** T0 vs T3= p = 0.13 **T1 vs T2= p = 0.002** **T1 vs T3= p = 0.025** T2 vs T3= p = 1.00
Anger Rumination Scale	iApp	T0 vs T1= p = 0.127 T0 vs T3= p = 0.027 T1 vs T3= p = -0.094
	dApp	T0 vs T1= p = 1.00 **T0 vs T2= p = 0.039** T0 vs T3= p = 0.271 **T1 vs T2= p = 0.000** **T1 vs T3= p = 0.029** T2 vs T3= p = 1.00

		Post-hoc
Misophonia Screening	iApp	**T0 vs T1= p = 0.000** **T0 vs T3= p = 0.000** T1 vs T3= p = 1.00
	dApp	T0 vs T1= p = 1.00 **T0 vs T2= p = 0.000** **T0 vs T3= p = 0.000** **T1 vs T2= p = 0.000** **T1 vs T3= p = 0.000** T2 vs T3= p = 0.885
A-MISOS-R	iApp	**T0 vs T1= p = 0.001** **T0 vs T3= p = 0.000** T1 vs T3= p = 1.00
	dApp	T0 vs T1= p = 1.00 **T0 vs T2= p = 0.000** **T0 vs T3= p = 0.004** **T1 vs T2= p = 0.000** **T1 vs T3= p = 0.014** T2 vs T3= p = 0.144

Conclusions

- Our results support cognitive behavioral models of psychopathology, indicating that maladaptive interpretations of internal or external events may lead to excessive emotional responses to such events (Kovacs & Beck, 1978; Tremblay & Dozios, 2009). Furthermore, our findings suggest that reappraisal of personal maladaptive interpretations can lead to a reduction in Misophonia and anger symptoms (Schröder, Vulink, et al., 2013) and that such reappraisals can be achieved via brief, daily mobile delivered training exercises.