



LETTER OF ACCEPTANCE

Jakarta, March 16, 2022

Number: 278-ICEBSH/2601/UNTAR/II/2022

Attention to : Irena Monica Hardjasasmita, Aretha Ever Ulitua, Cindy
Claudia Soen, Roswiyani Roswiyani
The Author(s) of Paper ID: 278-ICEBSH

Do Cognitive Training Games Actually Work for ADHD? A Literature Review

We are pleased to inform you that your submission is **Accepted** for presentation in **International Conference on Economics, Business, Social, and Humanities (ICEBSH) 2022** will be held online on March 23 – 24, 2022, using a video conference platform. This Paper will be electronically published in the ICEBSH 2022 Proceeding, after being reviewed and approved by our Publisher (Atlantis Press Publisher).

Thank you very much for your attention.

Jakarta, March 16, 2022

The ICEBSH 2022 Chairperson



Dr. Eng. Titin Fatimah, M.Eng.

Do Cognitive Training Games Actually Work for ADHD? A Literature Review

Irena Monica Hardjasmita¹ Aretha Ever Ulitua² Cindy Claudia Soen³ Roswiyani Roswiyani⁴

Introduction

- 5,29% of the world's population suffer from Attention Deficit Hyperactivity Disorder (Polanczyk et al., 2007).
- Clinicians nowadays are also offering new and advanced interventions to treat client's mental health issues by providing innovative treatments via technology (Baker, 2019).
- Cognitive training mostly targeted on executive functions [EF] & executive dysfunction is common in ADHD patients (de Oliveira Rosa et al., 2018; Veloso et al., 2020).
- With pleasurable and interactive games available, it will help to keep ADHD patients stay motivated (Stone & Altvater, 2019).
- The aim of this review is to update the current empirical studies that examine the effectiveness of games in providing treatment for ADHD.



UNTAR
Universitas Tarumanagara



Methods

- A combination of keywords: ADHD; computerized cognitive training; and games, were used to search the electronic databases APA Psycnet and Atlantis Press for publications between 2017 until 2022.
- The systematic search yielded 10 publications. After eliminating the articles at the title and abstract level, five articles remained and were subsequently read.
- Data that were extracted from the article comprised of author(s), year of publication, country, study design, participants characteristic, interventions, and outcome measures. A descriptive approach was used to summarize the data.

Results

Table 1 Results of the study

Author(s)	Year	Country	Study design	Population and sample size	Results
Bikic et al.	2017	Denmark	Double-blind randomized pilot trial	18 participants with ADHD, age between 14–17 years that were divided into two groups.	SBT had a significant effect on sustained attention, whereas the active placebo (Tetris) had significant beneficial effects on working memory
de Oliveira Rosa et al.	2017	Brazil	Randomized clinical trial	6 ADHD patients aged 10–12-years that were divided into active or placebo conditions.	Both active and placebo condition showed decrease in ADHD symptoms without statistical difference between them and there's a need for new strategies to better assess the effectiveness of cognitive training in a school environment to have an assessment
de Oliveira Rosa et al.	2018	Brazil	Randomized clinical trial	35 participants aged 6 to 13 years receiving stimulant treatment were randomized either to a computerized cognitive training (CCT) or to controlled non-active condition.	This study does not provide evidence for the benefits of cognitive training over non-active training on core ADHD symptoms in medicated ADHD children and adolescents.
de Oliveira Rosa et al.	2019	Brazil	Randomized controlled clinical trial	20 children with ADHD aged 9 to 13 years randomized either to a CCT or to a controlled non-active condition.	Cognitive training was associated with activation of the brain area that regulates attention and working memory, but not in inhibitory control.
Agustini, M.	2019	Indonesia	Experimental Study	One boy with ADHD aged 8 years.	ADHD Trainer improves cognitive skills by training the cognitive areas.

Discussion

- ADHD Trainer, CCT-ACTIVATETM, and SBT target the executive function to reduce the ADHD symptoms (inattentive, hyperactivity-impulsivity).
- Video game-based interventions have been used in cognitive training and could help in the formation and restructuring of neurobiological pathways, especially in children as a child's brain displays plasticity.
- Based on previous research about the implementation of computerized cognitive training on ADHD one of its limitation is motivation.
- Technology has proven to be helpful in various ways and yet we still need to consider the bug that may happen when we use technology as the tool for intervention.

Conclusion

- ADHD Trainer, SBT and CCT-ACTIVATETM have been shown to decrease ADHD symptoms whereas CCT-ACTIVATETM also had no significant effect in patients with ADHD
- Motivation also plays a role in supporting symptom reduction through games.

Thank You



UNTAR
Universitas Tarumanagara

62th
Untar Bersinergi
Untar Bereputasi

LPPM UNTAR
Lembaga Penelitian dan
Pengabdian kepada Masyarakat

**Kampus
Merdeka**
INDONESIA JAYA



*International Conference on Economics, Business,
Social, and Humanities (ICEBSH)*

CERTIFICATE of Achievement

No : 278 /Presenter-ICEBSH/III/2022

Roswiyani

for the contribution as :

Presenter

Paper Title :

Do Cognitive Training Games Actually Work for ADHD? A Literature Review

Director
Institute of Research and Community Engagement
Universitas Tarumanagara



Assoc. Prof. Ir. Jap Tji Beng, MMSI., Ph.D.

Chairperson
ICEBSH 2022



Dr. Eng. Titin Fatimah, S.T., M.Eng.



Untar Jakarta



Untar.ac.id

UNTAR untuk INDONESIA