Psychotherapeutic Tool for Addressing Depression in Teenagers Through Video Games

Hybrid Intelligent Systems(HIS 2021)

- Oluwasefunmi Arogundade,

- Adeniyi Akanni,

- Sanjay Misra,

- Abiodun Mustapha,

- Kayode Ogunremi,

- Timothy Ayo &

- Jonathan Oluranti

Abstract

Depression is a major cause of psychological diseases that has claimed millions of lives in Nigeria in recent years. The trend seems to be growing as more people are slipping down the road to depression. It is even worrisome that the young age category is not immune. Depression affects not only the life of the victim but also the family, friends and ultimately the society. Thus, it is fast becoming a social problem that needs an urgent intervention through Information and Communication Technology. This research presents a tool for addressing this problem through a video game as a psychotherapeutic process. This leverage on the power of optics which connects what the users see with their neurons linked to the brain cells. The result from testing the tool showed that 80% of the patients perceived the tool to be capable of facilitating healing of depression. A mass employment of this game will make it easier to self-address depression problems.

This is a preview of subscription content, log in via an institution to check access.

Similar content being viewed by others

Winning The Game Against Depression: A Systematic Review of Video Games for the Treatment of Depressive Disorders

Article 01 January 2022

Designing CBT-Rich Stories for Serious Games

Chapter © 2021

Mental Jam: A Pilot Study of Video Game Co-creation for Individuals with Lived Experiences of Depression and Anxiety

References

1. Chen, L., et al.: Depression among Chinese university students: prevalence and socio-demographic correlates. PloS one **8**(3), e58379 (2013)

   Article **Google Scholar**

2. Sarokhani, D., Delpisheh, A., Veisani, Y., Sarokhani, M.T., Manesh, R.E., Sayehmiri, K.: Prevalence of depression among university students: a systematic review and meta-analysis study. Depression Res. Treat. **2013** (2013)

   Google Scholar

3. Kvam, S., Kleppe, C.L., Nordhus, I.H., Hovland, A.: Exercise as a treatment for depression: a meta-analysis. J. Affect. Disord. **202**, 67–86 (2016)

   Article **Google Scholar**

4. Spyrou, E.D., Mitrakos, D.K.: Social participation of depressed individuals as an optimisation problem. In 2017 International Conference on Computational Science and Computa-tional Intelligence (CSCI), pp. 1666–1671. IEEE (2017)

   Google Scholar

5. Wamia, A., Victorine, N.: The role of support groups in the management of depression amongst people living with HIV at regional hospital of Bamenda. Open J. Depression **8**, 71–84 (2019)

   Article **Google Scholar**

6. Chisholm, D., et al.: Scaling-up treatment of depression and anxiety: a global return on investment analysis. Lancet Psychiat. **3**(5), 415–424 (2016)

   Article **Google Scholar**

7. Ceranoglu, T.A.: Video games in psychotherapy. Rev. Gen. Psychol. **14**(2), 141–146 (2010)

Article **Google Scholar**

8. Merry, S.N., Stasiak, K., Shepherd, M., Frampton, C., Fleming, T., Lucassen, M.F.: The effectiveness of SPARX, a computer-ised self-help intervention for adolescents seeking help for depression: randomized controlled non-inferiority trial. BMJ **344**, e2598 (2012)

Article **Google Scholar**

9. Poppelaars, M., et al.: A randomized con-trolled trial comparing two cognitive-behavioral programs for adoles-cent girls with subclinical depression: a school-based program (Op Volle Kracht) and a computerized program (SPARX). Behav. Res. Therapy **80**, 33–42 (2016)

Article **Google Scholar**

10. Li, J., Theng, Y.L., Foo, S.: Effect of exergames on depression: a systematic review and meta-analysis. Cyberpsychol. Behav. Soc. Netw. **19**(1), 34–42 (2016)

Article **Google Scholar**

11. Granic, I., Lobel, A., Engels, R.C.: The benefits of playing video games. Am. Psychol. **69**(1), 66 (2014)

Article **Google Scholar**

12. Carrasco, Á.E.: Acceptability of an adventure video game in the treatment of female adolescents with symptoms of depression. Res. Psychother. Psychopathol. Process Outcome **19**(1) (2016)

Google Scholar

13. Anguera, J.A., Gunning, F.M., Areán, P.A.: Improv-ing late life depression and cognitive control through the use of thera-peutic video game technology: a proof-of-concept randomized trial. Depress. Anxiety **34**(6), 508–517 (2017)

Article **Google Scholar**

14. Kühn, S., Berna, F., Lüdtke, T., Gallinat, J., Moritz, S.: Fighting depression: action video game play may reduce rumination and

increase subjective and objective cognition in depressed patients. Front. Psychol. **9**, 129 (2018)

[Article](#) [Google Scholar](#)

15.   Alshawwa, I.A., Elkahlout, M., El-Mashharawi, H.Q., Abu-Naser, S.S.: An expert system for depression diagnosis (2019)

[Google Scholar](#)

16.   Moore, G.F., et al.: Process evaluation of complex interventions: medical research Council guidance. BMJ **350**, 1–7 (2015)

[Google Scholar](#)

17.   Oyesiku, D., Adewumi, A., Misra, S., Ahuja, R., Damasevicius, R., Maskeliunas, R.: An educational math game for high school students in Sub-Saharan Africa. In: Florez, H., Diaz, C., Chavarriaga, J. (eds.) ICAI 2018. CCIS, vol. 942, pp. 228–238. Springer, Cham (2018). https://doi.org/10.1007/978-3-030-01535-0_17

[Chapter](#) [Google Scholar](#)

18.   Odusami, M., Maskeliunas, R., Damaševičius, R., Misra, S.: Comparable study of pre-trained model on alzheimer disease classification. In: Gervasi, O., et al. (eds.) Computational Science and Its Applications – ICCSA 2021: 21st International Conference, Cagliari, Italy, September 13–16, 2021, Proceedings, Part V, pp. 63–74. Springer International Publishing, Cham (2021). https://doi.org/10.1007/978-3-030-86976-2_5

[Chapter](#) [Google Scholar](#)

[Download references](#)

Author information

Authors and Affiliations

1. **Department of Computer Science, Federal University of Agriculture, Abeokuta, Nigeria**
   Oluwasefunmi Arogundade, Abiodun Mustapha & Kayode Ogunremi
2. **Department of Mathematical Sciences, Anchor University, Lagos, Nigeria**

Adeniyi Akanni

3. **Department of Computer Science and Communication, Ostfold University College, Halden, Norway**
   Sanjay Misra

4. **Department of Computer Science, University of Ilorin, Ilorin, Kwara State, Nigeria**
   Sanjay Misra

5. **Global Technology Managament and Policy Research Group, Southern University and A & M College, Baton Rouge, USA**
   Timothy Ayo

6. **Center of ICT/ICE, Covenant University, Ota, Nigeria**
   Jonathan Oluranti

Corresponding author

Correspondence to [Sanjay Misra](#).

Editor information

Editors and Affiliations

1. **Scientific Network for Innovation and Research Excellence, Machine Intelligence Research Labs (MIR Labs), Auburn, WA, USA**
   Ajith Abraham

2. **Campus Centre de Créteil, Université Paris-Est Créteil, Créteil, France**
   Patrick Siarry

3. **Department of Computer Science, Università degli Studi di Milano, Milan, Milano, Italy**
   Vincenzo Piuri

4. **Scientific Network for Innovation and Research Excellence, Machine Intelligence Research Labs (MIR Labs), Auburn, WA, USA**
   Niketa Gandhi

5. **University of Bari, Bari, Italy**
   Gabriella Casalino

6. **Division of Graduate Studies and Research, Tijuana Institute of Technology, Tijuana, Mexico**
   Oscar Castillo

7. **Ontario Tech University, Oshawa, ON, Canada**
   Patrick Hung

Rights and permissions

Copyright information

About this paper

Cite this paper

Arogundade, O. *et al.* (2022). Psychotherapeutic Tool for Addressing Depression in Teenagers Through Video Games. In: Abraham, A., *et al.* Hybrid Intelligent Systems. HIS 2021. Lecture Notes in Networks and Systems, vol 420. Springer, Cham. https://doi.org/10.1007/978-3-030-96305-7_45

Download citation

- .RIS
- .ENW
- .BIB

- DOIhttps://doi.org/10.1007/978-3-030-96305-7_45
- Published04 March 2022
- Publisher NameSpringer, Cham
- Print ISBN978-3-030-96304-0
- Online ISBN978-3-030-96305-7
- eBook PackagesIntelligent Technologies and RoboticsIntelligent Technologies and Robotics (R0)

Publish with us

Policies and ethics

Access this chapter

Log in via an institution

Chapter

EUR 29.95
Price includes VAT (Nigeria)

- Available as PDF
- Read on any device
- Instant download
- Own it forever

Buy Chapter

eBook

EUR 213.99

Softcover Book

EUR 249.99

Tax calculation will be finalised at checkout
Purchases are for personal use only

<u>Institutional subscriptions</u>

- Sections
- References