

TEO: a new frontier for Artificial Intelligence applied to Mental Health.

Ciulli Tommaso, Danieli Morena, Riccardi Giuseppe, Di Natale Lorenzo, Barbato Simone, Mahed S. Mousavi.

Idego – Psicologia Digitale: Tommaso Ciulli, Lorenzo Di Natale, Simone Barbato

Università di Trento: Morena Danieli, Giuseppe Riccardi, Mahed S. Mousavi

Introduction

There are more than 10,000 mental health (m-health) mobile apps in the APP stores for treating different psychological needs such as depression, stress, anxiety, etc. Despite the great user interest in mental health APPs, most of them lack clinical validation and their design does not include the involvement of mental health professionals. We believe that these types of digital interfaces can provide users with more professional psychological support and increase the effectiveness of interventions.

In addition, in recent years there has been a renewed general interest in Artificial Intelligence and specifically in LLMs (Large Language Models); more recently, the use of these technologies in the world of healthcare in general and in the world of mental health has grown. Various research and projects have been launched as these technologies can contribute to the accessibility of psychological services in both the assessment and intervention phases or increase their effectiveness. In any case, such technologies deserve the attention and involvement of mental health professionals in their development.

For these reasons, a mobile application with artificial intelligence technologies was developed in collaboration with mental health professionals such as psychologists and psychotherapists. This APP, TEO (Therapy Empowerment Opportunity), was created as part of a European COADAPT project to facilitate the psychological adaptation and support of older workers.

Method

The research protocol involved dividing participants into different groups with corresponding intervention methodologies. Pre- and post-treatment tests were conducted to measure the dimensions of general well-being, anxiety, stress, and depression. Statistical analyses were conducted to investigate the impact of APP use on treatment.

Results

Analyses conducted in the groups showed significant differences between times for the group of participants with an integrated methodology (APP plus psychological meetings). In this group, significant improvements were found on levels of stress and general well-being such as anxiety and depression. These improvements were accompanied by high levels of satisfaction from psychologists and users.

Conclusion

The benefits gathered from integrating the APP into a psychological pathway were recognized by participants; people reported a high level of satisfaction as well as professionals, who evaluated the APP as a valuable support tool that could make the time before, during, and after the session more efficient.

Bibliography

Danieli M, Ciulli T, Mousavi SM, Silvestri G, Barbato S, Di Natale L, Riccardi G. Assessing the Impact of Conversational Artificial Intelligence in the Treatment of Stress and Anxiety in Aging Adults: Randomized Controlled Trial. *JMIR Ment Health* 2022;9(9):e38067. doi: 10.2196/38067