AYRE

Tecnología aplicada para el
Bienestar Emocional

264,000,000

de personas sufren de trastornos de

ansiedad y **300,000,000**

de **depresión.**

La mayoría **desconocen**
los síntomas somáticos

Dolores musculares, fatiga extrema,
problemas digestivos, entre otros, son

Somatizaciones

de los trastornos emocionales

El problema

En la era actual, caracterizada por rápidos y constantes cambios, hiperconectividad y altas presiones sociales, los desórdenes emocionales se han convertido en una epidemia silenciosa.

Un desafío clave es que muchas personas con trastornos emocionales desconocen los síntomas de depresión y ansiedad, enfrentándose en su lugar a somatizaciones como dolores musculares, falta de sueño, alteración del apetito, problemas digestivos y fatiga extrema. Sin reconocer estas señales como indicativos de una condición emocional subyacente, pueden adoptar hábitos nocivos para aliviar su malestar, sin una comprensión plena de su causa real.

La solución

AYRE

Aplicación tecnológica que tiene como objetivo mejorar la calidad de vida de las personas a través del bienestar emocional, regulando las emociones de

Ira, **Tristeza** y **Ansiedad**.

Utilizando técnicas avanzadas de Inteligencia Artificial, Realidad Virtual, Realidad Aumentada y otras tecnologías emergentes.

Estudios científicos

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ORIGINAL RESEARCH
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Design and Validation of Augmented Reality Stimuli for the Treatment of Cleaning Obsessive-Compulsive Disorder

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Fear to contamination is an easy-to-provoke, intense, hard-to-control, and extraordinarily persistent fear. A worsening of preexisting psychiatric disorders was observed during the COVID-19 (coronavirus disease 2019) outbreak, and several studies suggest that those with obsessive–compulsive disorder (OCD) may be more affected than any other group of people. In the face of worsening OCD symptoms, there is a need for mental health professionals to provide the support needed not only to treat patients who still report symptoms, but also to improve relapse prevention. In this line, it is recommended to improve alternative strategies such as online consultations and digital psychiatry. The aim of this study is to develop augmented reality (AR) stimuli that are clinically relevant for patients with cleaning OCD and assess their efficiency to obtain emotionally significant responses. Four AR stimuli were developed: a plastic bag full of garbage, a piece of bread with mold, a dirty sports shoe, and a piece of rotten meat. All stimuli were shown to a clinical group (17 patients with cleaning OCD) and a control group (11 patients without OCD). Relevant results were the design of the AR stimuli. These stimuli were validated with the statistical difference in perceived anxiety in the meat stimuli between the clinical and control groups. Nevertheless, when looking at effect sizes, all stimuli present effect sizes from small (plastic bag) to large (meat), with both shoe and bread between small and medium effect sizes. These results are a valuable support for the clinical use of these AR stimuli in the treatment of cleaning OCD.

Keywords: augmented reality, obsessive compulsive disorder, e-health, anxiety, emotion

INTRODUCTION

Fear to contamination is an easy-to-provoke, intense, hard-to-control, and extraordinarily persistent fear. Besides, it is a kind of fear that is often culturally prescribed, highly spread by the media, which makes it more expansive and contagious (Rachman, 2004; Durna et al., 2019). This fear has been identified as the most common symptom of the obsessive–compulsive disorder (OCD, Mathes et al., 2019). In fact, 46% of OCD patients show obsessions related to fear of contamination even in minor contamination incidents, such as shaking hands or touching dirty objects (Bhikram et al., 2017). Washing or disinfecting hands is the compulsion most associated with contamination

Tras 30 años de investigación, científicos han demostrado que las tecnologías inmersivas son útiles para evaluar y tratar trastornos de la salud mental.

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Design of virtual environments for the treatment of agoraphobia: Inclusion of culturally relevant elements for the population of the Dominican Republic

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ABSTRACT

Virtual Reality is a powerful tool for the treatment of agoraphobia. However, how effective is the use of these scenarios when they do not resemble the sociocultural context? Literature suggests that the inclusion of culturally relevant elements increases the ecological validity and transferability of learning since it reduces the gap between the virtual and real context. Unfortunately, in Latin America, the development of virtual environments is incipient, and the use of generic virtual environments is commonplace. The objective of this study was to develop virtual environments that include elements that are culturally relevant to the population of the Dominican Republic. Three hundred people with symptoms of agoraphobia were interviewed. Based on the information obtained, four scenarios were designed: house, elevator, park and public transport. In each scenario, the parameters that increase anxiety levels (for example, number of people) may be controlled and modified, allowing the development of exposure levels.

1. Introduction

According to the DSM-5 (American Psychiatric Association, 2013), agoraphobia is characterized by the presence of elevated anxiety levels when the person finds themselves in places or situations from which escape may be difficult or in which help may not be available in the event of having a panic attack. The anxiety experienced with agoraphobia tends to coincide with a combination of characteristic situations, typically avoided, such as being alone outside the house, finding one's self in the middle of a crowd, and traveling by bus, among others (Olivares-Olivares, Costa-Moreno, & Olivares, 2014; Pittí et al., 2015).

Various studies note the existence of a strong link between the development indicators of a country and its mental health status (De la to Castro et al., 2014; World Health Organization, 2004). In this sense, the prevention, attention, and rehabilitation of people affected by mental disorders such as anxiety constitute a growing health concern in Latin America and the Caribbean (García-Batista et al., 2017). Agoraphobia has been shown to be one of the most prevalent anxiety disorders. In Latin America, 2.5% of people have had agoraphobia during the course of their life (Pan American Health Organization, 2013) and have probably had problems with normal functioning due to the level of disability it causes the person. Likewise, in the Dominican Republic in 2016, 7.03% of Dominicans suffered an emotional disorder (Observatorio de Políticas Sociales y Desarrollo, 2016), of which 5.7% were anxiety disorders (World Health Organization, 2017). Currently, the social and health systems of the Dominican Republic are still in a development phase and are not easily accessible to all. These disorders have a negative impact on both the number of resources of a country and on the poverty level and future expectations. In this regard, it is likely that technological developments will provide a more efficient and effective alternative to treating mental health disorders.

The Internet as a delivery method for interventions may help in overcoming barriers to treatment and assessment, since it does not require travel time to and fro a therapy session, and is able to overcome the issue of locally available therapists. In fact, a number of Internet-delivered programs have already become important tools in the health system (Botella, García-Palacios, Baños Rivera, & Quero Castellano, 2009). Virtual Reality (VR) is a technology highly compatible with

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Review article

Design and validation of virtual environments for the treatment of cleaning obsessive-compulsive disorder☆

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ARTICLE INFO

Keywords:
Obsessive-compulsive disorder
Contamination
Cleaning
Virtual reality
Anxiety

ABSTRACT

During the coronavirus outbreak, it was noted that pre-existing psychological illnesses worsened, and numerous research indicate that those with contamination-related obsessions and cleaning compulsions (C-OCD) may be more affected. Virtual Reality (VR) and other immersive technologies have shown to be effective for the treatment of disorders related to anxiety, thus showing their potential to transform OCD treatment by means of integrating virtual elements. VR exposure has shown benefits compared to live or imagined exposure, however, to be effective it must be able to elicit high emotional arousal in users. Based on this, the present work aimed to develop different virtual environments scenarios and evaluate their efficacy in generating an emotional response in people with C-OCD symptoms. Based on the literature review, two virtual scenarios were created (dirty public bathroom and unhygienic kitchen). Subsequently, two groups were then constituted: C-OCD group (n = 20, aged between 18 and 48 years) characterized by an obtained score of more than 13 points (cut-point) in the Yale-Brown Scale for Obsessive-Compulsive Disorder (Y-BOCS) and by showing C-OCD symptoms when doing the structured interview (SCID-I), and a control group (n = 20, aged between 18 and 56 years), all participants were residents of the Dominican Republic. Exposure to the virtual environments generated high levels of state and subjective anxiety in both groups, although significantly higher in the C-OCD group. The results obtained indicate that the VR scenarios developed are suitable for eliciting emotional responses and, consequently, that they can be used to complement the treatment of C-OCD.

1. Introduction

In December 2019, SARS-COV-2 or COVID-19, a new and extremely contagious coronavirus, first detected in Wuhan, China, and rapidly spread throughout the world before being formally recognized as a global pandemic in March 2020 (World Health Organization, 2020). Most nations have used a variety of strategies to slow the spread of the virus, including social isolation and lockdowns that require people to stay inside (Trógolo et al., 2022). During the pandemic, the media increased the dissemination of information related to the risk of contagion and the importance of preventive actions. Thus, the population was encouraged to protect themselves from incidences of mild contamination, such as handshake or touching things, and the importance of washing or disinfecting hands was emphasized (Jelinek et al., 2021).

The coronavirus disease (COVID-19) outbreak was associated with an aggravation of pre-existing psychiatric problems (Yao et al., 2020), and various research indicate that those with contamination-related OCD and washing compulsions ('washers') may be more vulnerable than any other group of individuals (Fineberg et al., 2020; Fontenelle and Miguel, 2020). According to Davide et al. (2020), the COVID-19 epidemic caused patients who already had symptoms of contamination and patients who had not established remission prior to quarantine to experience worsening of their symptoms. Comparable results were obtained by Benatti et al. (2020) who report an increase in obsessive-compulsive disorder the

* C-OCD: contamination/cleaning obsessive-compulsive disorder.
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Diferentes estudios han mostrado su beneficio para el bienestar de la población general: Blum et al., 2019; Cebolla et al., 2019; Naylor et al., 2019; Seabrook et al., 2020; Villani; Riva, 2002; entre otros.

AYRE

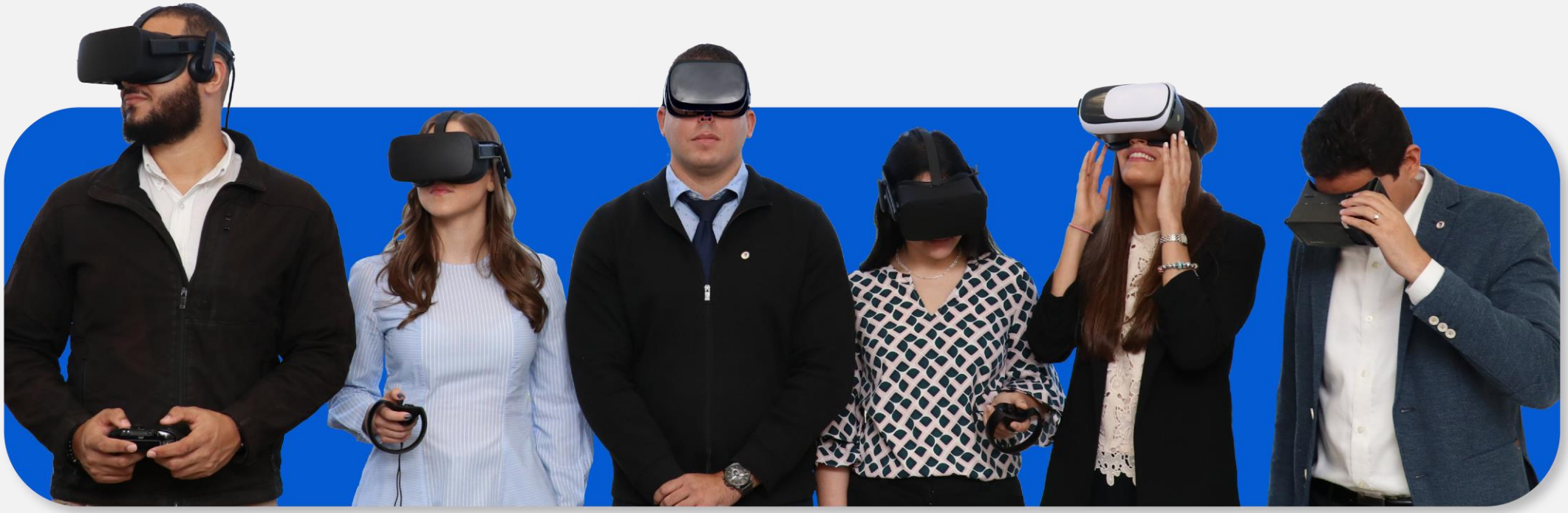
Esta plataforma interactiva ofrece una serie de herramientas personalizadas y adaptativas que guían a los usuarios a través de ejercicios y actividades enfocadas en la reducción del **estrés**, la ansiedad, ira y tristeza.

Con un diseño intuitivo y accesible, busca ser un recurso valioso para cualquier persona que desee **mejorar su bienestar emocional**, ofreciendo un refugio virtual para la relajación, el autoconocimiento y el crecimiento personal.

¿Cómo funciona?

Al integrar algoritmos inteligentes, la aplicación es capaz de aprender de las interacciones y preferencias del usuario, ajustando las sesiones para optimizar los resultados y promover un progreso sostenible hacia el bienestar mental y emocional. Logrando **regular las emociones** de Ira, Tristeza y Ansiedad, con el fin de disminuir las **respuestas cognitivas**, fisiológicas y motoras o conductuales.

Casos de usos



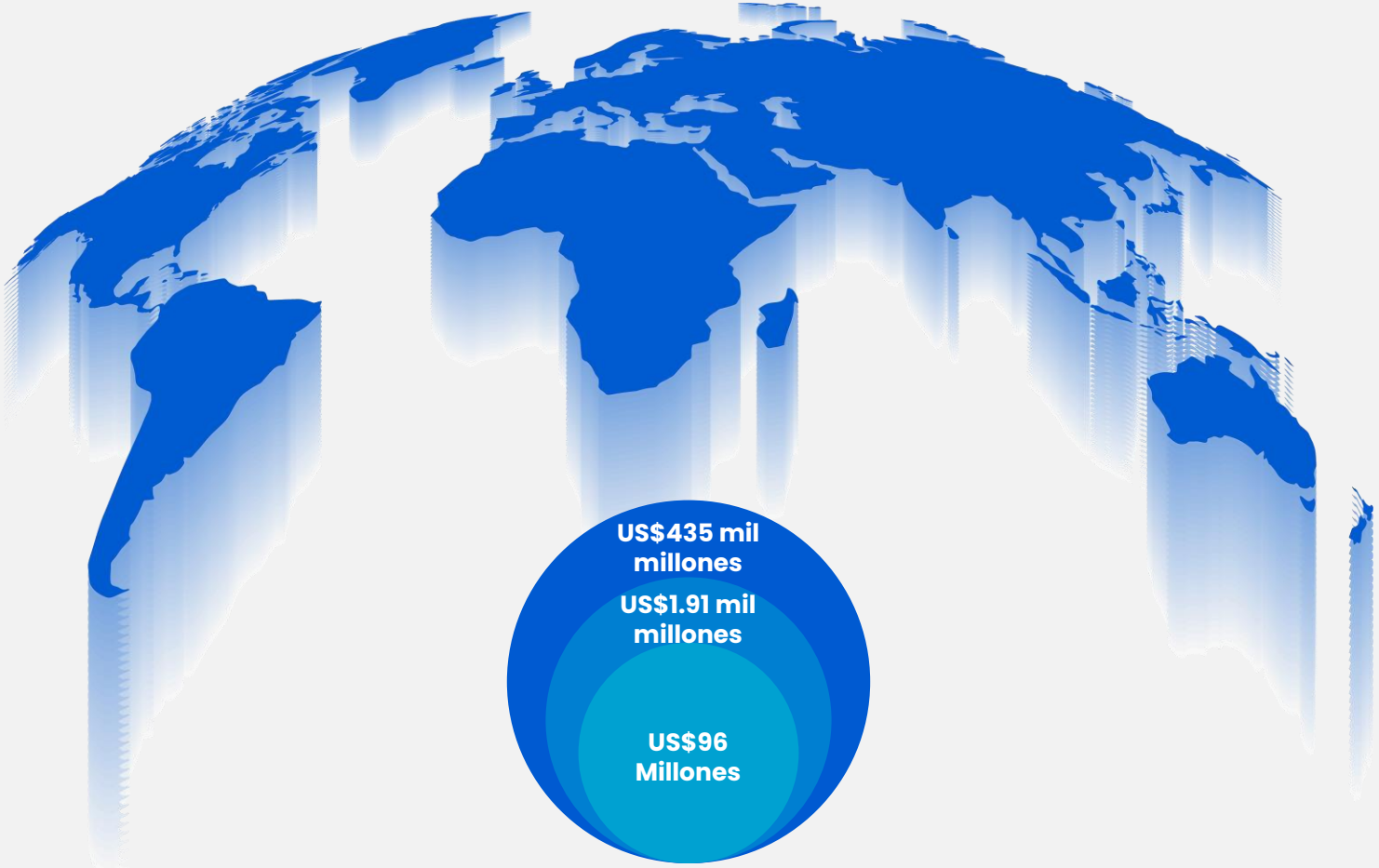
Salas de Equilibrio Emocional para empresas.

Salas de Equilibrio Emocional en las universidades.

Uso personal e individual.

Control de emociones para mejora de desempeño, lograr el equilibrio entre estrés necesario o excesivo en los deportistas.

Mercado meta



TAM: mercado global de la salud mental
SAM: mercado del metaverso para la salud mental 2023*
SOM: mercado del metaverso para la salud mental 2023 en América latina

https://www2.deloitte.com/co/es/pages/life-sciences-and-healthcare/articles/aplicaciones-de-salud-mental-un-mercado-con-potencial-y-en-crecimiento.html

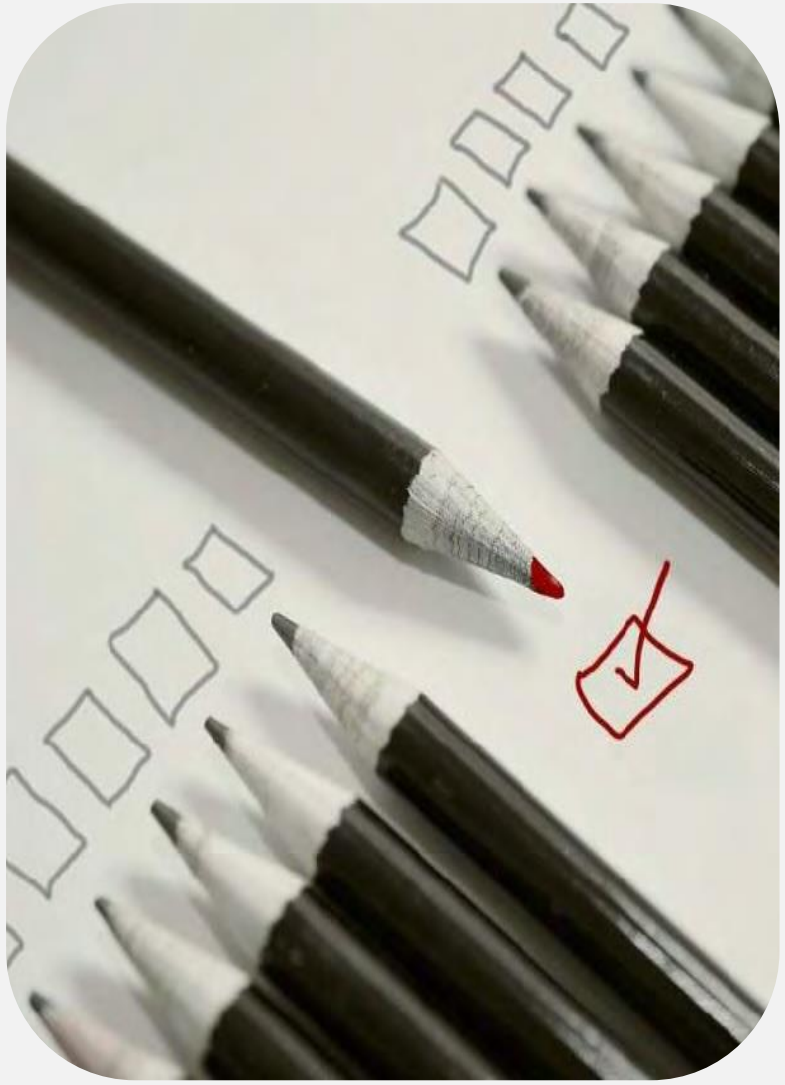
¿Cómo nos diferenciamos?

La aplicación usa Inteligencia Artificial para aprender de las interacciones del usuario, ajustando las sesiones para mejorar el bienestar mental de manera sostenible.

Nuestra app trasciende el uso de realidad virtual, permitiendo que cualquier usuario con un smartphone acceda a sus beneficios.

Nuestra solución posee evidencia científica que demuestra su efectividad en la mejora del bienestar emocional.

Nuestro enfoque se centra en reducir/eliminar las somatizaciones provocadas por desbalances en las emociones de ira, tristeza y ansiedad.



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Psicólogo, profesor e investigador con más de 15 años de experiencia en APP de RV para la salud mental. Creador de "TAVE", ha desarrollado sistemas de RV para diversos trastornos y habilidades. Profesor asociado en la Universidad de Vic, donde enseña sobre tecnologías en psicología y lidera en Relax VR, enfocándose en alianzas europeas.

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