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Editorial: Current use of virtual reality and e-therapy for the treatment of trauma and stress-related disorders

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Editorial on the Research Topic
Current use of virtual reality and e-therapy for the treatment of trauma and stress-related disorders

Recently, the use of virtual reality and technological innovations based on e-therapy have had a great impact on trauma and stress-related disorders, such as PTSD, allowing evidence-based interventions for these mental disorders. Given the technological advancements and the scope that these systems have shown in recent years, it is important to have updated treatment protocols based on new proven and effective technologies. Furthermore, given the high demand for mental health services due to COVID-19, it is especially important to have specialized treatments for trauma and stress-related disorders in the current context. The main objective of this issue is to present the latest advances in the incorporation of virtual reality in treatment protocols and e-therapy based intervention for trauma and stress-related disorders, as well as to identify the current state of prevalence and treatment programs based on new technologies for specialized care for trauma and stress-related disorders derived from COVID-19.

Several studies have been conducted for many years on the use of technology to treat trauma and stress-related disorders, specifically utilizing virtual reality for prolonged exposure therapy. This approach has proven to be highly effective (Rothbaum et al., 2010; Kothgassner et al., 2019). Despite the evidence supporting technology-supported programs in trauma and stress-related disorders, some authors suggest that there are still limitations in terms of the dissemination and implementation of these programs for certain populations. In recent years, some alternatives have been proposed, such as combining technologies, for example, using VR-based therapy through online programs. This approach could be more accessible and acceptable, as users could benefit from these programs from home, considering that VR-based programs are typically carried out in the office (Wiederhold & Riva, 2019; Linder, 2021). Although the use of VR through online programs has gained relevance, more research is needed as it has only been studied in some disorders, and it seems that trauma-related disorders could benefit from these type of programs.

One of the articles presented in this Research Topic, discusses e-therapy and virtual reality exposure therapy, Freedman et al. describes the development and evaluation of an internet based Virtual Reality early treatment aimed at preventing chronic PTSD. The study uses a five-session treatment protocol, presenting all content in multiple formats, including therapist verbal

explanations, text guided exercises, videos and VR environments in a virtual therapy room. The protocol includes CBT components, such as trauma-related education, breathing retraining, *in vivo* exposure, narrative of trauma exposure using VR, and relapse prevention. Overall, the results showed that the internet-based VR treatment was acceptable, and the clinical measures indicated significantly lower levels of PTSD in post-assessments. The authors concluded that these types of treatments can be highly effective in trauma recovery and very acceptable, however more studies with larger populations are needed to determine whether these treatments are more effective than natural recovery. Considering the current trend of moving virtual reality-based therapy programs to remote modalities, this study provides further empirical support for more accessible programs in trauma care.

Regarding the prevalence of trauma-related disorders in COVID-19 surviving patients, Luna-Rodriguez et al., present an article in this issue that aims to describe and compare the prevalence and severity of PTSD, anxiety, depression, and fear of COVID-19 in survivors 3 months after discharge from the hospital. The study conducted was a cross-sectional descriptive study. The results presented are very interesting, indicating that almost half the survivors had anxiety, depression and/or PTSD symptoms. Moreover, significant differences were found between men and women, with women showing higher rates of severe symptoms. This paper provides valuable information regarding mental health following traumatic events such as COVID-19 and hospitalization. It highlights the importance of implementing evidence-based treatments for survivors who are mostly affected by symptoms associated with PTSD, anxiety, or depression. And how treatments can help decrease associated risk factors such as suicide and addictions.

In the article presented by Quero et al., the authors analyse the efficacy of a web platform for homework administration (TEO) in patients with Adjustment disorder (AjD). The study aimed to present session-by-session efficacy data and assess patients' acceptability about this component in both traditional and TEO formats. To achieve this, the authors conducted a two-arm pilot randomized clinical trial in which both groups received the same VR-supported CBT intervention, but one group performed homework *via* TEO, and the other in a traditional way (mainly through reading and writing assignments). The results showed that both groups experienced significant improvements in mood, self-efficacy, and emotional variables. However, participants' opinion, showed a preference for the TEO condition, both before starting treatment and after completing the homework assignment. The authors concluded that implementing homework *via* an online platform could be as effective as the traditional format but would be preferred by patients. This study is the first to test the effect of an online homework program during AjD treatment, to the authors' knowledge, which has very positive implications in online intervention programs and treatment activities adherence.

Similarly, Rachyla et al. researched the treatment of AjD using a CBT internet-based intervention (TAO). This study aimed to assess the acceptability of a therapist-guided online intervention among participants and to establish its impact on treatment outcomes. To achieve this objective, the authors used the results obtained in the randomized controlled trial testing the efficacy of TAO. The authors found that most participants were willing to try the online intervention and rated it as useful, convenient, and attractive. In general, participants felt that the treatment required considerable motivation, and therapeutic support was important in maintaining adherence. Finally, certain treatment modules related to promoting identification with treatment goals, relapse prevention or processing of a stressful event were found to be related to changes in posttraumatic growth, positive affect, and quality of life. In summary, this paper provides relevant information regarding the acceptability and suitability of internet interventions for AjD, which provides greater empirical support for the functionality of these programs.

Numerous studies in this field have demonstrated the substantial utility and effectiveness of technology-based treatments, such as virtual reality and online therapy programs for managing trauma and stress-related disorders. With the recent technological advancements and growing interest in this area, as well as the societal significance of addressing trauma, additional research is imperative to advance and strengthen this field of study.

Author contributions

All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

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