



# Editorial: Virtual Reality, Augmented Reality and Video Games for Addressing the Impact of COVID-19 on Mental Health

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## Editorial on the Research Topic

### Virtual Reality, Augmented Reality and Video Games for Addressing the Impact of COVID-19 on Mental Health

Since 2020, the worldwide coronavirus 2019 (COVID-19) pandemic has been reported to have increased the frequency of adverse mental health and stress-related conditions, including, depression, anxiety disorders, PTSD, and substance use (Pfefferbaum and North, 2020; Xiong et al., 2020; Niles et al., 2021). Changes in lifestyle behaviors, social isolation, boredom, financial security, and general uncertainty appear to have had a negative impact on the mental health of populations globally, with potential long-lasting psychological and physical consequences (Brooks et al., 2020; Moreno et al., 2020; Salari et al., 2020).

Virtual reality (VR), augmented reality (AR), and video games (VGs) appear as some of the most appealing technological interventions for addressing the impact of COVID-19 on mental health (Granic et al., 2014; Imperatori et al., 2020; Riva et al., 2020; Singh et al., 2020; Viana and De Lira, 2020; Woolliscroft, 2020; Barr and Copeland-Stewart, 2021; Rizzo et al., 2021 in press). Therefore, we brought together within this Research Topic contributions from researchers investigating theoretical, empirical, experimental, and case studies of VR, AR, and VGs for addressing the impact of COVID-19 on mental health.

## OPPORTUNITIES AND BARRIERS OF VR FOR SUPPORTING MENTAL HEALTH IN THE ERA OF COVID-19

Pimental et al. discuss the promise of VR to improve mental health by connecting communities to clinical and social support systems. The authors identify socioeconomic barriers to widespread VR use, delineated across five dimensions (i.e., sociocultural, content, affordability, supply chain, and equitable design). Solutions that can ensure this technology can be equitably accessed via existing, and future infrastructure changes are discussed.

Sampaio et al. explore how therapists are using telepsychology before vs. during the COVID-19 pandemic. An online survey on 768 mental health professionals showed that before COVID-19, most therapists only saw their patients in person. However, during the COVID-19 pandemic, nearly all therapists used a wide range of telecommunication technologies to communicate with their patients,

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including texting, telephones, video conferences, and even VR. Although this study reported that VR is rarely used by the therapists surveyed, according to the authors, in the future, therapists and patients in physically different locations will be able to “meet” in a shared computer-generated world designed for therapy sessions, potentially including group sessions.

Stradford et al. provide methods for launching a clinical trial during the COVID-19 pandemic. They carried out a pilot study on five healthy female participants aged between 51 and 76 years that uses an in-lab brain and body training program to promote brain health in mid-to-late life older adults. Based on the findings of this pilot study, the authors suggest that continued VR clinical trial research during the COVID-19 pandemic is achievable and can be safely resumed if specific safety protocols are in place to mitigate the risk of exposure and spread of COVID-19.

## COMMERCIAL-OFF-THE SHELVES VIDEO GAMES AND AD HOC VIRTUAL REALITY CONTENTS FOR PSYCHOLOGICAL SUPPORT DURING THE COVID-19 PANDEMIC

Lewis et al. investigate whether participation in the famous socializing and life simulation game “Animal Crossing: New Horizons” was related to emotional outcomes associated with pandemics (e.g., loneliness and anxiety). Results of an online survey conducted on 1,053 participants showed that increased gaming and related activities predicted higher anxiety and increased loneliness. However, increased

visits to another island were associated with lower levels of loneliness. According to the authors, players may be utilizing gaming as a coping mechanism for anxiety.

Pallavicini et al. detail MIND-VR’s design and evaluation protocol, a virtual reality-based psychoeducational experience on stress and anxiety developed following a user-centered design approach. The virtual experience will be tested on a sample of Italian hospital healthcare personnel involved in the COVID-19 pandemic emergency and is available free of charge, both in Italian and English, on the project website (<https://mind-vr.com/>).

## CONCLUSION

The papers published on this Research Topic provide an overview of the applications of VR, AR, and VGs for supporting mental health during the COVID-19 pandemic, giving relevant insights for future developments in their adoption for remote psychological support. We believe that these technologies can soon revolutionize the way to support mental health, creating solutions and programs low-cost and easily accessible to millions of people worldwide.

## AUTHOR CONTRIBUTIONS

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

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**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.

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