

How Virtual Reality Can Help Address and Prevent Bullying and Cyberbullying?

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ABSTRACT

In the last decade, technologies have made it possible to address different fields of research. Virtual reality is being used as a tool to study different processes, including bullying and cyberbullying. Research in virtual reality applied as a methodology to combat bullying and cyberbullying in the learning environment presents challenges when searching for and incorporating adequate pedagogical strategies. The development must include multidisciplinary teams that focus on their field of specialization, to achieve the stated objectives. This article aims to analyze the research related to the application of virtual reality as a strategy to combat bullying and cyberbullying. Published works addressing virtual reality and bullying were identified. The search was conducted in Scopus, Springer, PubMed, and Web of Science from inception to December 31, 2021, yielding four published papers in this field.

Keywords: Bullying, Cyberbullying, Virtual reality, Pedagogical strategies

INTRODUCTION

Harassment and cyberbullying have become a concern during the last decade, being approached from various theoretical and methodological approaches (Del Rey et al., 2015). According to UNICEF (2019), one in three students in thirty countries reported being victims of a cyberbullying incident and one in five reported missing school due to cyberbullying and violence. Indeed, the population with this type of experience is more likely to suffer psychological disorders such as depression (Zhang et al., 2020) and emotional difficulties with their peers (Lozano-Blasco et al., 2020). In terms of educational outcomes, cybervictimization is associated with greater problems in school attendance and academic performance (Gardella et al., 2017).

Likewise, experiencing bullying, cyberbullying or intimidation in childhood is associated with risks of alcohol and tobacco use. The study conducted in Canada that included 475 schools and 64,174 students in grades 7 to 12, victimization experiences were significantly associated with excessive alcohol consumption and smoking. These results indicate that these experiences in children may generate a higher probability of excessive alcohol and tobacco consumption (Struck et al., 2021).

On the other hand, parenting style is estimated to be a risk or protective factor against traditional bullying and cyberbullying, considering the tendency of aggression, antisocial behavior, school adjustment and self-esteem in adolescents. In the study, a sample of 1109 adolescents with a mean age of 13.88 and 49 was conducted. Ninety-six percent of women's participation, it was confirmed that parenting characterized using reasoning and warmth practices, can function as a protector against traditional harassment and cyberbullying. As an opposite effect, authoritarian parenting (use of physical and verbal deprivation and coercion practices) would be a risk factor for traditional bullying and cyberbullying (Martínez et al., 2019), therefore, improving early childhood parenting can reduce bullying behavior (Kim, Hahlweg, Schulz, 2021).

In this sense, self-esteem is a crucial factor in psychological well-being, campaigns to prevent all types of violence in educational institutions should be promoted, as well as increasing the capacity of children and adolescents to seek social support and develop critical thinking skills (Jankowiak et al., 2021). Against this background, efforts must be strengthened to prevent these experiences of victimization and help those who have experienced it. Understand that addressing prevention throughout the training process could reduce health risk behaviors in children, children, and adolescents (Struck et al., 2021).

However, technologies have made it possible to address different fields of research. Virtual reality is being used as a tool to study different processes, including harassment and cyberbullying. Research in virtual reality applied as a methodology to combat bullying and cyberbullying in the learning environment presents challenges when it comes to finding and incorporating appropriate pedagogical strategies. The development should include multidisciplinary teams that focus on their field of expertise, to achieve the objectives set. This article aims to analyze research related to the application of virtual reality as a strategy to combat bullying and cyberbullying.

This article is structured as follows: Section 2 presents the methodology used as a key basis in the proposal. Section 3 presents results. Section 4 presents the conclusions obtained from the results and suggests future lines of research.

METHODOLOGY

In this article we focus on educational programs aimed at combating bullying and cyberbullying that use virtual reality. These should be aimed at children and adolescents, considering that educational programs describe different interventions, instructions or set of activities on combating bullying and cyberbullying.

For selection, we considered the preferred reporting guidelines for the declaration of systematic reviews and meta-analyses (PRISMA) (Moher et al., 2009).

First Step

For the selection, the participants were children and adolescents; educational programs to combat bullying and cyberbullying that use virtual reality; articles in English published in peer-reviewed academic journals.

Second Step

We searched Scopus, Springer, PubMed, and Web of Science for research abstracts from inception to 31 December 2021.

Step Three

We limited the search for peer-reviewed articles published in English. We considered the title and abstract for the search.

The following search terms were used: “harassment”, “victimization”, “intimidation”, “cyberbullying”, “cyber aggression”, “Virtual reality”, “prevention”, “intervention”.

Step Four

Studies were selected in four stages: identification, selection, eligibility, and inclusion, according to PRISMA (Moher et al., 2009). For the identification stage, the data was exported to Excel and duplicate articles and those that did not meet the eligibility criteria were eliminated.

Step Five

Data were extracted from the title of the article, participants, methodology and results.

RESULTS

We found 761 articles in the first round of search. After eliminating the articles not related to the criteria, it was reduced to 156 articles. Of these, the title of the articles and abstracts were verified, leaving forty-three articles. Of these, four articles met the established criteria (See Table 1).

CONCLUSION

Bullying is a health and safety problem for children and adolescents that can have profoundly serious long-term consequences. The use of virtual reality in bullying prevention programs has yielded greater empathy, this allows us to establish that it could be used as a prevention tool for bullying and cyberbullying (Ingram et al., 2019), affective interactions increase when children believe that the conversations and performances of the characters modify their behavior, increasing empathy in them (Hall et al., 2005), allowing to face situations through stimuli (Ramos-Galarza et al., 2021).

In this sense, an intervention that allows children and adolescents to obtain strategies to deal with bullying, generated short-term results and allowed to escape bullying and prevent it (Sapouna et al., 2010). This can be strengthened with educators trained in the identification of these incidents, for which virtual reality allows simulating incidents of harassment to establish when

Table 1. Classified articles.

Article	Author	Participants	Method	Results
Virtual learning intervention to reduce bullying victimization in primary school: A controlled trial”	Sapouna et al., 2010	1129 children in twenty-seven primary schools	FearNot! intervention or the waiting control condition. The program consisted of three sessions, each lasting approximately 30 minutes over a period of three weeks.	The intervention had results in escaping harassment in the short term and a short-term prevention effect
Evaluation of a virtual reality enhanced bullying prevention curriculum pilot trial	Ingram et al., 2019	118 high school students	Pseudo-random pilot of a bullying prevention program enhanced with virtual reality	The virtual reality condition yielded greater empathy before and after the intervention compared to the control condition. The scope and practical limitations of the virtual reality trial prevented a larger-scale and more rigorous evaluation.
A 3D virtual environment for training teachers to identify bullying”	Stavroulia et al., 2016	Teachers	Using a dedicated Virtual Reality app to empower educators to identify alarming bullying activities	The prototype was evaluated by active teachers who reported that the incidents within the simulation were like real-life experiences.
Achieving empathic engagement through affective interaction with synthetic characters”	Hall et al., 2005	345 children	Empirical study with virtual environment (FearNot)	Expression of empathy increases when children have elevated levels of belief and interest in character conversations

the teacher should intervene and control the situation of harassment in real life (Stavroulia et al., 2016). However, to transform educational systems it is necessary to effectively update and train students, educators, and society in general (Condor-Herrera et al., 2021).

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