

Virtual reality helps children on autism spectrum improve social skills

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Tandra Allen, head of virtual training programs at the Center for BrainHealth, conducts training with a research participant. Credit: University of Texas at Dallas

Although most children with high-functioning autism have above average intellectual capabilities, they often experience social difficulties.

Deficits in social communication and difficulty inhibiting thoughts and regulating emotions can lead to social isolation and low self-esteem. However, new research from the Center for BrainHealth at The University of Texas at Dallas shows that a new virtual reality training program is producing positive results.

"Individuals with autism may become overwhelmed and anxious in social situations," research clinician Dr. Nyaz Didehbani said. "The virtual reality training platform creates a safe place for participants to practice social situations without the intense fear of consequence."

Findings published in the journal *Computers in Human Behavior* reveal that participants who completed the training demonstrated improved social cognition skills and reported better relationships. Neurocognitive testing showed significant gains in emotional recognition, understanding the perspective of others and the ability to solve problems.

For the study, 30 young people ages 7 to 16 with high-functioning autism were matched into groups of two. The teams completed 10, one-hour sessions of [virtual reality training](#) for five weeks. Participants learned strategies and practiced [social situations](#) such as meeting a peer for the first time, confronting a bully and inviting someone to a party. Participants interacted with two clinicians through virtual avatars. One clinician served as a coach, providing instructions and guidance, while the other was the conversational partner who played a classmate, bully, teacher or others, depending on the scenario in the world that's similar to a video game.

"This research builds on past studies we conducted with adults on the autism spectrum and demonstrates that virtual reality may be a promising and motivating platform for both age groups," said Tandra Allen, head of virtual training programs. "This was the first study to pair participants together with the goal of enhancing social learning. We

observed relationships in life grow from virtual world conversations. We saw a lot of growth in their ability to initiate and maintain a conversation, interpret emotions and judge the quality of a friendship."

"It's exciting that we can observe changes in diverse domains including emotion recognition, making social attribution, and executive functions related to reasoning through this life-like intervention," said Dr. Daniel C. Krawczyk, associate professor of cognitive neuroscience and cognitive psychology in the School of Behavioral and Brain Sciences and Debbie and Jim Francis Chair. "These results demonstrate that core social skills can be enhanced using a virtual training method."

More information: Nyaz Didehbani et al. Virtual Reality Social Cognition Training for children with high functioning autism, *Computers in Human Behavior* (2016). [DOI: 10.1016/j.chb.2016.04.033](https://doi.org/10.1016/j.chb.2016.04.033)

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