

IIT-Gn developing low-cost noise reducing devices for autistic kids

AVINASH NAIR

AHMEDABAD, JUNE 9

RESEARCHERS FROM the Indian Institute of Technology-Gandhinagar (IIT-Gn) are developing low-cost devices for autistic children in India. This includes affordable headphones that act as noise-cancelling devices and low-cost sensors — part of a larger system being designed to educate, train and rehabilitate children with complex neurodevelopment disorders.

“Children with autism or auditory processing disorder often have a hard time with noise. Background noise like that of a fan or a toilet flush or a vacuum cleaner can increase the anxiety level in the child. It is for this that these headphones or earmuffs come in handy.

“In the recent past, there have been instances in other countries where headphones have been used to help such children. These headphones are very expensive and the costs can vary between Rs 4,000 and Rs 25,000,” said Nithin V George, assistant professor, Electrical Engineering, IIT-Gn who is working on developing a low-cost device for children who battle disorders characterised by social impairments, communication difficulties and restricted, repetitive and stereotyped patterns of behaviour.

“The device is currently at a design stage. It is a little premature to put a price tag, but it should cost around Rs 1,000. The headphones will be such that a child can wear it all day without discomfort,” George told *The Indian Express* on the sidelines of an event held on autism at the Knowledge Consortium of Gujarat (KCG) campus here recently.

Currently IIT-Gn is conducting a feasibility study along with BM Institute of Mental Health in Ahmedabad to assess the workability of such a device among

Children with Autism often have a hard time dealing with noise.

Background noise like that of a fan or a toilet flush or a vacuum cleaner can increase anxiety in them

autistic children. It is also receiving funding from the Department of Science and Technology (DST), Government of India.

“No studies have been done on this in the past, so we are conducting a feasibility study as well,” the professor added.

Meanwhile, another set of researchers from the same department at IIT-Gn are engaged in developing a special system for autistic children who have difficulty interpreting what others think or feel, as they do not understand social cues, such as tone of voice or facial expressions.

“We are developing a virtual reality-based anxiety sensitive adaptive intelligent system for autistic children. The purpose is to address the gap in their social skills,” said Uttama Lahiri, assistant professor of IIT-Gn who is heading a team of researchers who are busy creating real-world-simulations using computer graphics.

“We are trying to use technology so that will make educating, training and rehabilitating autistic children much more simple. With these virtual simulation models, we will help these children enhance their motor-skills, understand social etiquette, face unexpected situations and make friends,” said Lahiri.

Meanwhile, this team is also developing low-cost sensors that is part of the intelligent system used to help autistic children.

“These sensors also have a wider application,” she added.